2813

A CATALOGUE OF *CLADOPHORA* CONTAMINANT DATA FOR THE GREAT LAKES AND INTERCONNECTING CHANNELS, 1981 - 1989

VOLUME II - ORGANICS

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A CATALOGUE OF *CLADOPHORA* CONTAMINANT DATA FOR THE GREAT LAKES AND INTERCONNECTING CHANNELS, 1981-1989

VOLUME II - ORGANICS

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PREFACE

Cladophora is a genus of the class Chlorophyceae (green algae) that grows attached to solid substrates as a branched macroscopic thallus. *Cladophora* cells accumulate contaminants (certain metals and synthetic organic compounds) from the surrounding water, even when the aqueous concentrations are very low. *Cladophora* is therefore an excellent biomonitor of contaminants in water, especially at locations where inputs of contaminants may be at chronic low levels or where significant concentrations occur only after intermittent pulse inputs. *Cladophora* integrates these exposures over time so that the contaminant content of this alga is a good measure of the "average" contaminant levels in the ambient water. Regular and long term measurements of *Cladophora* contaminant levels may be one of the best ways of tracking long term trends in certain contaminants, especially at locations where conventional water sampling cannot detect low concentrations and might miss intermittent inputs resulting from spills, illegal discharges, or other irregular inputs determined by weather events.

The information presented in this data report should be utilized for general information only and not as a source for rigorous numerical comparisons. The data are often highly variable from year-to-year and comparisons should be made with caution. The variability in the *Cladophora* contaminant data is likely a result of the growth rate of the plants prior to collection, the age of the plants collected, previous spill events (a short term pulse of contaminants), long term changes in contaminant loading and the sample collection location (Oertel 1991). Variability could be controlled somewhat in future studies by using "clean" laboratory grown plants of uniform age and growth rate outplanted to field sites for contaminant uptake. Part I of this report (Hollister et al. 1993) includes selected metals concentrations in *Cladophora* samples.

ACKNOWLEDGEMENTS

Ken Nicholls kept the *Cladophora* contaminant program alive during staffing shortages. His discussion sessions and advice have helped to direct this work from the start. The authors also gratefully acknowledge the work of the Inorganic Trace Contaminants Section of the Ministry of Environment and Energy's Laboratory Services Branch, in the analyses of these samples.

Note: All references to Ministry of Environment in this report should read Ministry of Environment and Energy.

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INTRODUCTION

Cladophora glomerata (L.) Kütz is a freshwater green alga with a wide distribution in the lower Great Lakes. It is a benthic alga, a member of the periphyton, which forms elongated cord-like thalli that are light to dark emerald green in color. Typical thalli growing under favourable conditions are 30 cm long or more. *Cladophora* requires a hard substratum for attachment and growth. The plants can form very dense populations just under the surface which extend for kilometres along rocky shores. An excellent summary of the autecology of *Cladophora* is provided by Dodds (1991).

Cladophora has been widely used to monitor contaminants in surface waters. Field studies have been performed in Europe (McLean 1974, Larsson 1987, Whitton et al. 1989, Oertel 1991) and in the Great Lakes area (Burkett 1973, Keeney et al. 1976, Wells et al. 1980, Anderson et al. 1982, MOE 1982, Jackson 1988, Jackson et al. 1990, MOE 1991). Laboratory studies have explored the growth effects, physiology and mode of contaminant uptake in *Cladophora* species (Whitton 1970, Williams 1970, Burkett 1975, Schanz & Thomas 1978, Sivalingam & Ismail 1981, Sivalingam & Ismail 1982, Vymazal 1990).

Cladophora is well established as a biomonitoring tool. This publication is a data report which summarizes a decade of *Cladophora* contaminant sampling in southern Ontario. As a data report there is no extensive interpretation of results. The report format is designed for perusing the data and drawing the readers attention to information or sites that require more study. The data presented herein should not be used for contaminant loading calculations or detailed comparisons between sites.

MATERIALS AND METHODS

Cladophora samples were collected from Collingwood Harbour, the St. Clair River, the Detroit River, Lake Erie, the Niagara River, Lake Ontario, Canagagigue Creek and the Grand River at the sample sites shown in Figures 1-3 and described in Tables 1-8. Samples were collected for determination of internal concentrations of elements and organic compounds from 1981 to 1989, during June and July, when *Cladophora* biomass was at its peak. Approximately 1 kg wet weight of algae was collected at each site. This was then washed with ambient water to remove silt and debris, squeezed dry, wrapped in absorbent paper and transported on ice to the MOE laboratory in Rexdale, Ontario. The samples were then frozen to -50°C, dried, ground and sub-sampled for analysis in triplicate. From 1981-1985 samples were dried to a constant weight at 50°C prior to analysis, while from 1986-1989 samples were freeze dried using no tray heating. Analysis indicated no discernable difference between the two drying methods (MOE unpublished data, 1990). All chemical analyses were performed following the "Handbook of Analytical Methods for Environmental Samples" (MOE 1983).

In the following results, the lowest reportable value (LRV) represents the value below which there was no analytical response, while the reliable measurable value (RMV) represents the value below which the analytical result was considered somewhat unreliable due to imprecision or bias, as defined by the MOE, Laboratory Services Branch, Quality Assurance Policy and Guidelines. LRVs were treated as '0' in calculations. Although this sometimes biased the results, so that reported values were smaller than actual values, it was felt that this would be the best way to treat them. Reported values between the LRV and the RMV were treated as actual values. Although they were not considered entirely reliable by the lab they were used for two reasons; a) in the past the laboratory did not differentiate between 'normal' values and these 'trace' values. b) under the circumstances, it was the best available value. If all values in a calculation were LRVs, the sample was said to be Below Detection (BD).

It should be noted that there were a number of reasons why there were no results at some sample locations; due to technical problems in the field or at the lab, not all samples were collected or analyzed as planned, while at some sites there were insufficient amounts of *Cladophora* for a complete or even partial analysis. The minimal availability of samples at these sites could reflect locally toxic conditions. The values reported are the averages of the samples, which were analyzed in triplicate. An example of the standard deviation for these averages can be found in Appendices I and II (stations 415 and 402), which have respectively high and low concentrations of contaminants.

Graphs of selected organic concentrations have been provided to enhance the data (Figs. Can.1-Can.4, Ont.1-Ont.3, Niag.1-Niag.6, Erie.1-Erie.2, Det.1, Scr.1, Col.1 and Grd.1). However, as many of the organic concentrations were below detection (BD), not all of the results were gathered into figures; only those sample sites that had 50% or more of the results above the BD mark where graphed. A summary of all the data collected between 1981 and 1989 can be found in Tables 10-19. A complete list of the chemicals names and there short forms, used in this report, are presented in Table 9.

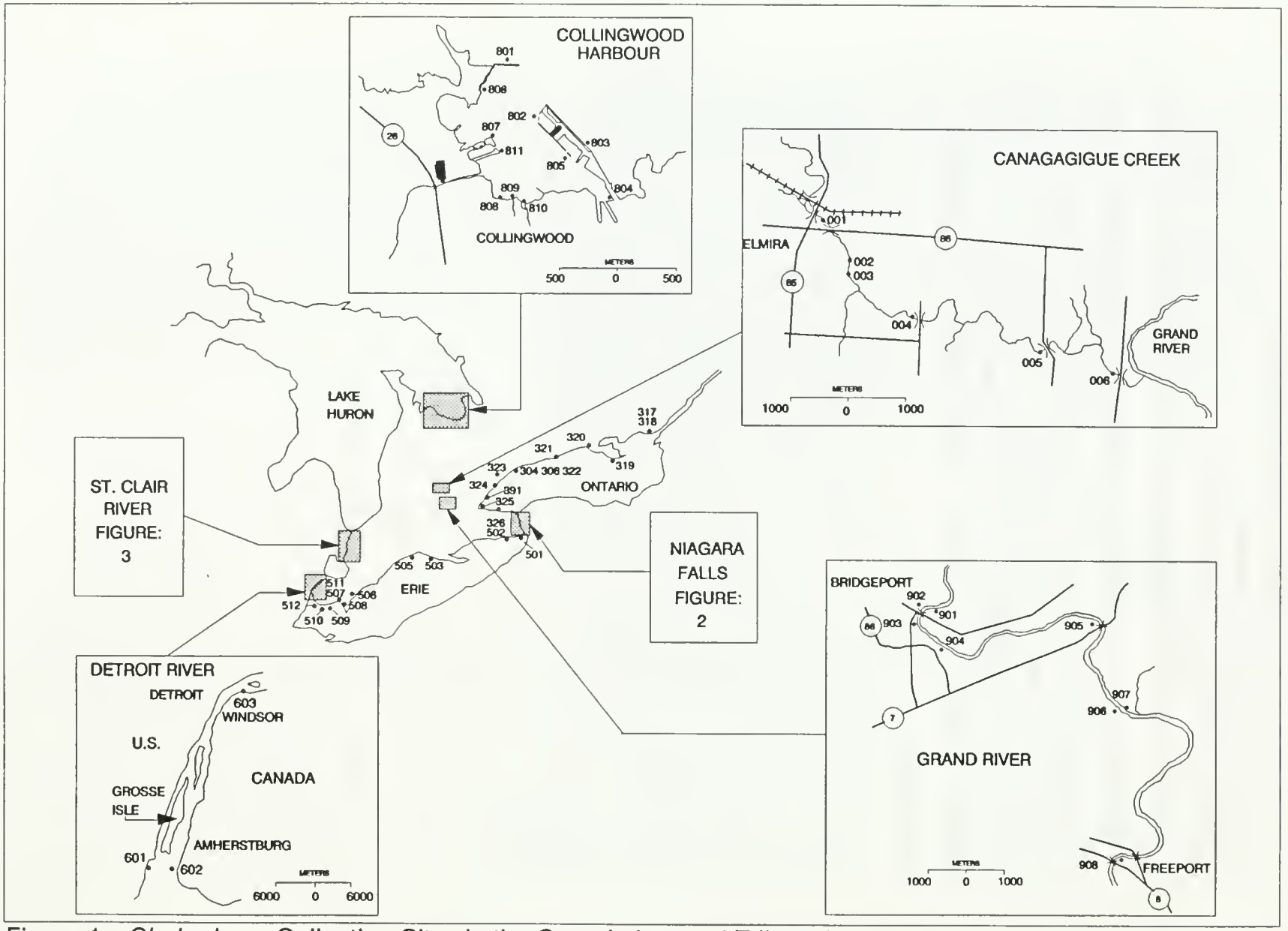

Figure 1: *Cladophora* Collection Sites in the Great Lakes and Tributaries

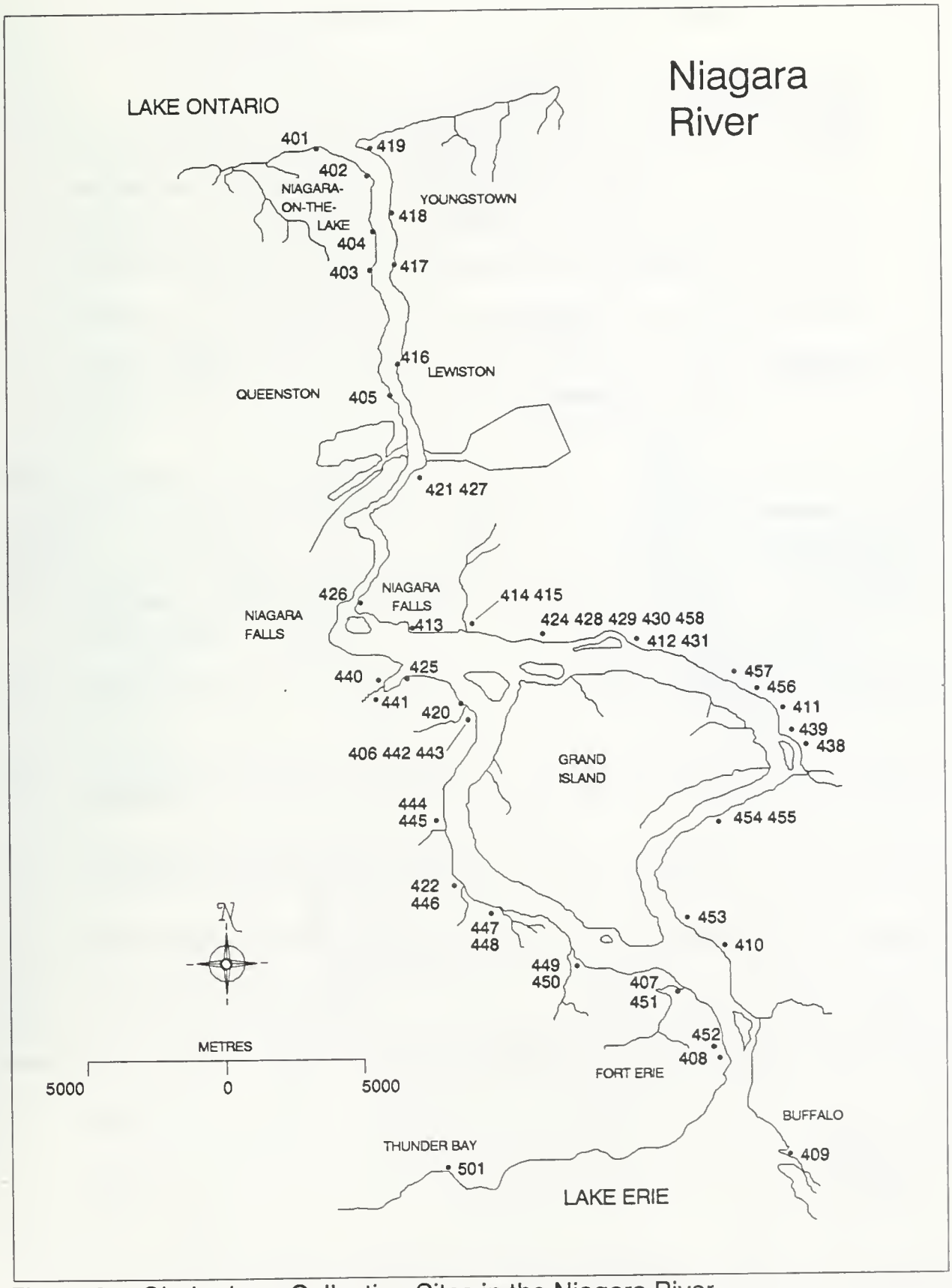

Figure 2: *Cladophora* Collection Sites in the Niagara River

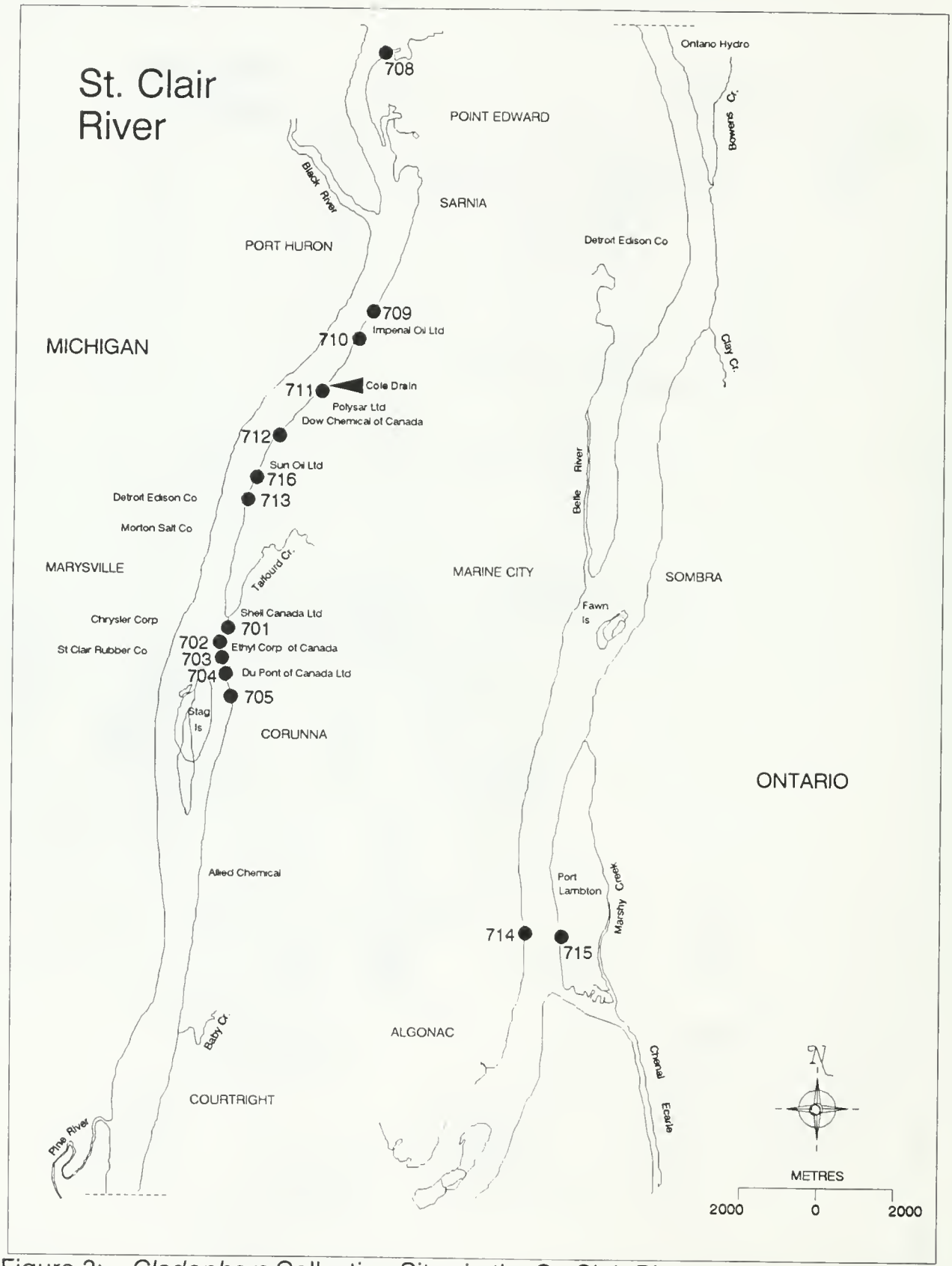

Figure 3: *Cladophora* Collection Sites in the St. Clair River

Canagagigue Creek, 001 Series

Cladophora samples were collected from shoreline sites along Canagagigue Creek, on May 12 (stations 001-006), 21 (stations 001-003, 005 and 006) and 26 (stations 001, 002 and 006), 1987 (Table 1). Samples were not obtained on all dates at the sites indicated earlier because *Cladophora* was no longer abundant, or as in the case of Site 004, macrophytes had taken over the area. To facilitate comparison between sites, only data for May 12 has been graphed (Figs. Can.1-Can.4), as this appeared to be when *Cladophora* growth was at its peak and the only date all sites were sampled.

Table 1: Canagagigue Creek Stations

Station	Location	Latitude	Longitude
001	Upstream, at the park just North of the bridge	43° 35' 00.00"	80° 35' 00.00"
002	100m upstream of overflow sewer, opposite Uniroyal	43° 35' 00.00"	80° 35' 00.00"
003	25m downstream of overflow sewer, on East side of creek	43° 35' 00.00"	80° 35' 00.00"
004	80m upstream of bridge #1, adjacent to Federal Gauge Stn.	43° 34' 00.00"	80° 33' 00.00"
005	50m upstream of bridge #2	43° 34' 00.00"	80° 31' 00.00"
006	25m upstream of bridge #3	43° 34' 00.00"	80° 30' 00.00"

Cladophora samples were collected from shoreline sites along Lake Ontario from 1981-1989 at 13 sites (Table 2). In 1981, *Cladophora* samples were collected on June 16-18 at sites 304 and 317-326. These same sites were sampled on July 22, 23 and 25, with the exception of site 323. On August 17-21, sites 304, 318, 319, 321, 322 and 324-326 were also sampled. June 16 and 17 were chosen to be representative of the 1981 data for graphing purposes (Figs. Ont.1-Ont.2), since this is when peak biomass occurred and when most of the sites were sampled.

From 1982-1984, *Cladophora* samples were collected at sites 304, 317, 319, 321, 322 and 324-326, with the exception of 318 which was added in 1982, and the time trend data collected from May 30 to Aug 29, 1983 at station 391 (Fig. Ont.3). In 1985, *Cladophora* samples were collected at the same sites as 1984, with the addition of site 306. The only data collected in 1986-1989 was at site 319, which has been presented as a time trend from 1981-1989 in Figure Ont.3.

Table 2: Lake Ontario Stations

Station	Location	Latitude	Longitude
304	Humber River (mouth), west shore at point opposite condominium	43° 37' 57.96"	79° 28' 30.95"
306	Ontario Place Lake	43° 37' 07.00"	79° 25' 05.00"
317	Cataraqui River (mouth), east shore opposite historical fort	44° 13' 04.07"	76° 32' 23.12"
318	Cataraqui R. (upstream), at Kingston bridge by Royal Military College	44° 13' 04.07"	76° 32' 23.13"
319	Prince Edward County (Owen Pt.), at exposed point of land	43° 53' 41.41"	77° 16' 42.32"
320	Trent River (mouth), partially exposed east shore opposite park	44° 06' 00.51"	77° 34' 25.10"
321	Ganaraska R. (mouth), at exposed breakwall bordering beach	43° 56' 37.61"	78° 17' 00.96"
322	Toronto Harbour East Gap, exposed eastern shore at south point	43° 37' 51.77"	79° 21' 04.86"
323	Aquitaine Lake, along eastern shore	43° 37' 34.46"	79° 40' 25.49"
324	Credit R. (mouth), exposed western breakwall (forming river channel)	43° 33' 11.47"	79° 35' 19.29"
325	Hamilton Harbour Ship Canal (mouth), shoreline 50m south of canal breakwall	43° 18' 12.20"	79° 47' 30.29"
326	Twelve Mile Creek (mouth), exposed shore 25m east of creek breakwall	43° 12' 23.60"	79° 15' 51.68"
391	Oakville (Park Ave.), east of Oakville Creek	43° 27' 21.48"	79° 44' 43.63"

Cladophora samples were collected from shoreline sites along the Niagara River from 1981-1989 at 52 sites, including the control at site 501 (Table 3). In 1981, *Cladophora* samples were collected on June 18 and 19 at sites 401-419, with the exception of station 408, 414 and 415, on July 23 and 24 for sites 401-407, 409-412 and 415-419, and on Aug 18 and 19 at sites 401, 402, 405-407, 410-412 and 414-419. June 18 and 19 were chosen to be representative of the 1981 data, since this was when peak biomass occurred. In 1982, *Cladophora* samples were collected on June 22, 23 and 24 from sites 401-405, 407, 409-413 and 415-420, and on July 17 at station 421. At site 407, two separate samples were collected, so the results for the two were averaged on the graphs presented in Figures Niag.1-Niag.4. In 1983, samples were collected on June 28 and 29 at sites 402, 406, 408, 412-415, 421 and 424-431.

In 1984, *Cladophora* samples were collected on June 28 and 29 at sites 402, 406-408, 410-413, 415 and 421. In 1985, samples were collected on June 25 and 26 at the same sites as 1984, with the addition of site 451. In 1986, *Cladophora* samples were only collected at site 402. In 1987, samples were collected on June 17 and 18 at the same sites as the 1985 samples, with the following exceptions: no sample was collected at site 406 and sites 414, 422, 429, and 438-458 were added. In 1988 and 1989, *Cladophora* samples were collected at sites 402, 406, 408, 410-412, 415 and 451. There were an additional 3 sites for 1988 at sites 413, 421 and 453.

Table 3: Niagara River Stations

Station	Location	Latitude	Longitude
401	Niagara-On-The-Lake, at Fort Mississauga	43° 15' 59.40"	79° 04' 18.02"
402	Fort George, just south of the dock	43° 14' 53.86"	79° 03' 35.75"
403	Inniskillin Rd., follow path down to river	43° 13' 49.06"	79° 03' 37.81"
404	St. Catharines Boat Club, to the south of the walkway	43° 13' 16.66"	79° 03' 38.83"
405	Queenston, Sand Co. lot off Dumfries St.	43° 10' 01.89"	79° 03' 22.86"
406	Navy Is., 100m south of the mouth of Ussher's Creek	43° 02' 25.26"	79° 00' 40.52"
407	Frenchman's Creek (mouth), 1st car park north of creek	42° 58' 06.07"	79° 00' 48.88"
408	Fort Erie, north of Peace Bridge at park by sand beach	42° 55' 50.20"	78° 55' 00.33"
409	Buffalo River (upstream), at marina at Coast Guard Rd.	42° 52' 33.39"	78° 52' 54.74"
410	At lighthouse on American shore	42° 56' 54.19"	78° 54' 14.05"
411	Tonawanda, north of Fishman Park west side of creek	43° 02' 17.35"	78° 53' 18.86"
412	Love Canal, south end of Griffon Park, opposite the dump	43° 04' 30.96"	78° 56' 55.37"
413	Dupont-Landfill North, 300m east of water treatment plant	43° 04' 51.82"	79° 01' 20.00"
414	Dupont-Above Sewer/Gill Crk., the north side of creek	43° 04' 51.82"	79° 01' 20.00"
415	Dupont-Below Gill Crk., south side of creek	43° 04' 51.82"	79° 01' 20.00"
416	Lewiston, just south of Riverside Park	43° 10' 33.91"	79° 02' 59.70"

Table 3: cont.

Station	Location	Latitude	Longitude
417	SCA Discharge, at Joseph Davis State Park	43° 13' 16.28"	79° 03' 16.68"
418	Youngstown, near green duck hunting hut at #3663 Duncan	43° 14' 21.08"	79° 03' 14.62"
419	Fort Niagara, at public boat launch	43° 15' 42.83"	79° 03' 56.37"
420	Ussher's Creek (mouth), at the mouth of creek	43° 02' 58.43"	79° 01' 23.65"
421	Bloody Run Creek (mouth), 10-20m south of power plant fence	43° 08' 07.36"	79° 02' 20.10"
422	Black Creek (mouth), adjacent to bridge on the north bank	43° 59' 49.83"	79° 01' 14.43"
424	53rd St. Dock, under transmission line #2, north of public dock	43° 04' 49.51"	78° 59' 07.41"
425	Welland River	43° 03' 56.75"	79° 01' 21.77"
426	American Falls	43° 05' 10.67"	79° 03' 54.19"
427	Bloody Run Creek (upstream), 10-20m south of power plant fence	43° 08' 07.36"	79° 02' 20.10"
428	S/N Area North, directly under 1st transmission line north of bridge	43° 04' 49.51"	78° 59' 07.41"
429	Occidental 003 Sewer (mouth), downstream of stone building	43° 04' 49.51"	78° 59' 07.41"
430	S/N Area South, right at the edge of power intake cement wall	43° 04' 49.51"	78° 58' 07.41"
431	Love Canal (South Bay), south end of Griffon Park, opposite the dump	43° 04' 26.93"	78° 53' 14.41"
438	Petit Flume (control), 70-100m upstream of flume mouth	43° 02' 01.00"	78° 53' 02.00"

Table 3: cont.

Station	Location	Latitude	Longitude
439	Petit Flume (mouth), north bank opposite Offtrack Betting Shop	43° 02' 01.00"	78° 53' 02.00"
440	Pell Creek, 30m upstream at Front and Daley St.	43° 03' 20.00"	79° 03' 30.00"
441	Lyons Creek, 50m upstream of Hwy. bridge	43° 03' 00.00"	79° 03' 50.00"
442	Ussher's Creek (control), 100m south of creek mouth	43° 02' 58.00"	79° 01' 23.65"
443	Ussher's Creek (upstream), 100m upstream of creek mouth	43° 02' 58.43"	79° 01' 23.65"
444	Boyer's Creek (mouth), at mouth of Boyer's Creek	43° 00' 08.00"	79° 01' 50.00"
445	Boyer's Creek (control), 300m upstream of creek mouth	43° 00' 08.00"	79° 01' 50.00"
446	Black Creek (control), 200m upstream of creek mouth	42° 59' 49.83"	79° 01' 14.43"
447	Baker Creek (mouth), at the far end of the car park	42° 58' 22.00"	79° 00' 23.00"
448	Baker Creek (control), 150m upstream of creek mouth	42° 58' 22.00"	79° 00' 23.00"
449	Miller Creek (mouth), at the mouth of Miller Creek	42° 57' 20.00"	78° 58' 25.00"
450	Miller Creek (control), upstream of creek mouth	42° 57' 20.00"	78° 58' 25.00"
451	Frenchman's Creek (control), north side of the mouth of the creek	42° 58' 06.07"	79° 00' 48.88"
452	Fort Erie, south side of beach, at park, north of Peace Bridge	42° 53' 05.00"	78° 56' 32.00"

Table 3: cont.

Station	Location	Latitude	Longitude
453	Black Rock Canal, at outflow channel opposite pumping station	42° 56' 54.19"	78° 54' 14.05"
454	2 Mile Creek (mouth), north bank at mouth of creek	43° 00' 40.00"	78° 54' 19.00"
455	2 Mile Creek (control), 220m upstream of snack bar	43° 00' 40.00"	78° 54' 19.00"
456	Gratwick Riverside Park, north end of landfill at end of park	43° 02' 50.00"	78° 53' 35.00"
457	Wheatfield, at old pilings at the end of the path beside river	43° 02' 58.00"	78° 53' 35.00"
458	Occidental 003 Sewer (control), downstream of stone building	43° 04' 49.51"	78° 59' 07.41"

Lake Erie, 500 Series

Cladophora samples were collected from the shoreline of Lake Erie at sites indicated in Table 4. Site 501 was the only sample collected on June 18, July 23, and August 19, 1981; June 23, 1982; June 28, 1983; June 27, 1984; June 25, 1985; July 3, 1986; June 17, 1987; and July 4, 1989. In 1988, collections were made on June 15 at sites 503 and 505-510, on June 16 at site 502, and on June 22 at sites 501 and 511.

Table 4: Lake Erie Stations

Station	Location	Latitude	Longitude
501	Thunder Bay-Windmill Pt., at east side of park by limestone ledges	42° 52' 08.52"	78° 59' 54.25"
502	Port Colborne, by canal entrance near boat launch	42° 54' 00.00"	79° 14' 00.00"
503	Port Burwell, inside west breakwall outside of main channel	42° 39' 00.00"	80° 49' 00.00"
505	Port Stanley, westside of harbour, in front of large storage tanks	42° 03' 00.00"	82° 27' 00.00"
506	Wheatley, limestone rubble on west side of boat launch	42° 03' 00.00"	82° 36' 00.00"
507	Leamington, at municipal marina, by lighthouse, inside breakwall	42° 03' 00.00"	82° 34' 00.00"
508	Sturgeon Creek, south side of original harbour entrance	42° 01' 00.00"	82° 34' 00.00"
509	Kingsville, at mouth of Mill Creek at Lakeside Park	42° 02' 00.00"	82° 45' 00.00"
510	Colchester, along the inside of west breakwall of harbour mouth	42° 08' 00.00"	82° 55' 00.00"

Detroit River, 600 Series

Cladophora samples were collected from shoreline sites along the Detroit River on June 19 and 20, 1986 and June 9 and 10, 1987 for all three sites (Table 5). In 1988, samples were collected on June 8 and 15 for sites 602 and 603; however, there was no *Cladophora* at site 601, possibly due to large amounts of suspended sediments. The June 8 and 15 results for stations 602 and 603 were averaged for Figure Det.1.

Table 5: Detroit River Stations

Station	Location	Latitude	Longitude
601	Lake Erie Metro Park, at the mouth on the American shore	42° 00' 03.00"	83° 10' 02.00"
602	Riverside Marina, on the Canadian shore south of Bois Blanc Is.	42° 04' 00.00"	83° 05' 04.00"
603	Bridges Bay Park/Edgewater Marina, at head of river	42° 20' 00.00"	82° 55' 01.00"

St. Clair River, 700 Series

Cladophora samples were collected from a variety of shoreline sites along the St. Clair River (Table 6). On July 3, 1984 collections were made at sites 701-705. In 1986, *Cladophora* samples were collected on July 22-24 at sites 708, 710 and 712-716 and September 17-18 at sites 709-711, 713 and 715. In 1987, *Cladophora* samples were collected on July 21 at sites 708, 713 and 715. In 1988, samples were collected on July 19 at sites 708 and 713-715 and July 22 at site 709. Peak *Cladophora* biomass usually occurred in June for most study areas in the lower Great Lakes. However, the St. Clair River reached peak biomass in July due to the cooling effect of Lake Huron's low water temperatures. Thus, the 1986 results, which are graphed in Figure Scr.1, were reported for samples only collected in July.

Table 6: St. Clair River Stations

Station	Location	Latitude	Longitude
701	Corunna, 100m south of Talford Crk., opposite the Shell water tower	42° 53' 10.10"	82° 28' 01.30"
702	Corunna, at sewer south of large smoke stack	42° 53' 10.10"	82° 28' 01.30"
703	Corunna, by cobble beach, 50m north of Pier 90	42° 53' 10.10"	82° 28' 01.30"
704	Corunna, at breakwall north of fast outfall	42° 53' 10.10"	82° 28' 01.30"
705	Corunna, by cobble beach at the foot of Beckwith St.	42° 53' 10.10"	82° 28' 01.30"
708	Point Edward, north side of Lambton Water Treatment Plant	43° 00' 15.00"	82° 25' 01.00"
709	Mueller, 150-200m south of Mueller Ltd.	42° 57' 20.00"	82° 25' 04.00"
710	Imperial Oil/C and Ferry, 30-50m south of discharge	42° 57' 40.00"	82° 24' 08.00"
711	Polysar, northside of breakwater at Polysar Pier, in front of lagoon	42° 56' 55.00"	82° 25' 08.00"
712	DOW, just south of two Dow stacks	42° 56' 12.00"	82° 26' 06.00"
713	Indian Reserve, 250-300m south of Suncor Dock	42° 55' 40.00"	82° 26' 55.00"
714	Algonac State Park, at breakwall at north end of park	42° 39' 10.00"	82° 30' 08.00"
715	Port Lambton, in front of Cottage Studio #88	42° 39' 05.00"	82° 30' 04.00"
716	Suncor Dock, by cement dock	42° 55' 55.00"	82° 26' 55.00"

Collingwood Harbour, 800 Series

Cladophora samples were collected from shoreline sites in Collingwood Harbour on June 18, 1986 at the 11 stations listed in (Table 7).

Table 7: Collingwood Harbour Stations

Station	Location	Latitude	Longitude
801	Outside west breakwall, 70m from the mouth of harbour	44° 30' 00.00"	80° 10' 07.00"
802	Wooden marker, near TN21	44° 30' 00.00"	80° 10' 07.00"
803	Outside east breakwall, 450m from the mouth of harbour	44° 30' 00.00"	80° 10' 07.00"
804	Shipyard at north east corner of harbour	44° 30' 00.00"	80° 10' 07.00"
805	Small boat dock near TN26	44° 30' 00.00"	80° 10' 07.00"
806	Inside west breakwall, at south east corner of harbour	44° 30' 00.00"	80° 10' 07.00"
807	Landfill, at north point of harbour	44° 30' 00.00"	80° 10' 07.00"
808	South west shore of harbour	44° 30' 00.00"	80° 10' 07.00"
809	Urban Creek 1, 5-30m inside the mouth at the east side of harbour	44° 30' 00.00"	80° 10' 07.00"
810	Urban Creek 2, 5-15m inside the mouth at the east side of harbour	44° 30' 00.00"	80° 10' 07.00"
811	Landfill, at south point of harbour	44° 30' 00.00"	80° 10' 07.00"

Grand River, 900 Series

Cladophora samples were collected from shoreline sites along the Grand River, on June 11 and 16, 1986 at all stations except 902 and on May 12, 1987 at station 902 (Table 8). In 1986, samples were unattainable on June 11 at all the sites due to inclement weather, so the remaining stations were sampled on June 16th. Samples were taken at Station 901 (control) on both days. At Station 902, *Cladophora* was too sparse to sample on both days in 1986; however, in 1987 enough algae was found to obtain a sample. Data for the two samples obtained at station 901 was averaged, and only data from 1986 has been presented in Figure Grd.1.

Table 8: Grand River Stations

Station	Location	Latitude	Longitude
901	Bridgeport (control), mid-channel	43° 29' 00.00"	80° 28' 06.00"
902	Laurel Creek, ripple area upstream of bridge	43° 29' 09.00"	80° 28' 29.00"
903	STP outfall, 500m downstream of STP in mid-channel on east side of island	43° 28' 08.00"	80° 29' 00.00"
904	Urban Creek, within channel	43° 28' 03.00"	80° 28' 05.00"
905	Highway #7, mid channel, upstream of bridge	43° 28' 08.00"	80° 25' 04.00"
906	Above New Breslube Creek, mid-stream in rapids	43° 27' 06.00"	80° 25' 01.00"
907	New Breslube Creek, upstream of road culvert at new metal culvert	43° 27' 08.00"	80° 24' 05.00"
908	Highway #8, upstream of highway, downstream of old bridges on south side of river	43° 25' 02.00"	80° 25' 00.00"

Table 9: Chemical Names and Associated Short Forms

Complete Chemical Name	Short Form
Aldrin	Aldrin
Alpha-Chlordane	α-Chlordane
Gamma-Chlordane	γ-Chlordane
Dicamba	Dicamba
2,4-Dichlorophenoxyacetic Acid	2,4-D
2,4-Dichlorophenoxybutyric Acid	2,4-DB
2,4-Dichlorophenoxypropionic Acid	2,4-DP
Dieldrin	Dieldrin
DMDT	DMDT
Endosulfan Sulfate	Endosulfan S
Endosulfan I	Endosulfan I
Endosulfan II	Endosulfan II
Endrin	Endrin
Heptachlor	HEPT
Heptachloroepoxide	HEPE
Hexachlorobenzene	HCB
Hexachlorobutadiene	HCBD
Alpha-Hexachlorocyclohexane	α-BHC
Beta-Hexachlorocyclohexane	β-BHC
Gamma-Hexachlorocyclohexane	γ-BHC

Table 9: cont.

Complete Chemical Name	Short Form
Hexachloroethane	HCE
Total Ignition, Residue	Total Ignition
Mirex	Mirex
Octachlorostyrene	OCS
OP-DDT	OP-DDT
Oxychlordane	Oxychldane
Pentachlorobenzene	PNCB
Pentachlorophenol	PCPH
Picloram	Picloram
Total PCB	Total PCB
PP-DDD	PP-DDD
PP-DDE	PP-DDE
PP-DDT	PP-DDT
Silvex	Silvex
1,2,3,4-Tetrachlorobenzene	1,2,3,4-TCB
1,2,3,5-Tetrachlorobenzene	1,2,3,5-TCB
1,2,4,5-Tetrachlorobenzene	1,2,4,5-TCB
2,3,4,5-Tetrachlorophenol	2,3,4,5-TCP
2,3,5,6-Tetrachlorophenol	2,3,5,6-TCP
1,2,3-Trichlorobenzene	1,2,3-TCB

Table 9: cont.

Complete Chemical Name	Short Form
1,2,4-Trichlorobenzene	1,2,4-TCB
1,3,5-Trichlorobenzene	1,3,5-TCB
2,3,4-Trichlorophenol	2,3,4-TCP
2,4,5-Trichlorophenol	2,4,5-TCP
2,4,6-Trichlorophenol	2,4,6-TCP
2,4,5-Trichlorophenoxyacetic Acid	2,4,5-TCPA
2,3,6-Trichlorotoluene	2,3,6-TCT
2,4,5-Trichlorotoluene	2,4,5-TCT
2,6,A-Trichlorotoluene	2,6,A-TCT

RESULTS

A summary of organic contaminants in *Cladophora*, for the years 1981-1989, collected at Canagagigue Creek, Lake Ontario, the Niagara River, Lake Erie, the Detroit River, the St. Clair River, Collingwood Harbour and the Grand River.

Table 10: *Cladophora* Collection Data for Canagagigue Creek

Station Number	Date of Collection	Aldrin ng/g dry	Alpha Chlordane ng/g dry	Gamma Chlordane ng/g dry	Dieldrin ng/g dry	DMDT ng/g dry	Endosulfan S ng/g dry	Endosulfan I ng/g dry	Endosulfan II ng/g dry	Endrin ng/g dry	HEPT ng/g dry	HEPE ng/g dry
001	87-05-12	BD	BD	BD	10	50	BD	7	BD	BD	BD	2
	87-05-21	BD	BD	BD	4	50	BD	11	BD	4	BD	2
	87-05-26	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	1
002	87-05-12	BD	BD	BD	BD	57	BD	BD	BD	BD	BD	0
	87-05-21	BD	BD	BD	BD	23	BD	BD	BD	BD	BD	0
	87-05-26	BD	BD	BD	6	53	BD	7	5	BD	BD	BD
003	87-05-12	BD	BD	BD	37	88	8	BD	BD	BD	BD	BD
	87-05-21	BD	BD	BD	BD	120	BD	BD	BD	BD	BD	BD
004	87-05-12	BD	BD	BD	BD	237	BD	BD	BD	BD	BD	BD
005	87-05-12	BD	BD	BD	BD	320	BD	BD	BD	BD	BD	BD
	87-05-21	BD	2	BD	BD	BD	BD	BD	BD	BD	BD	BD
006	87-05-12	BD	13	2	BD		BD	BD	BD	BD	BD	BD
	87-05-21	1	BD	1	17	65	6	BD	5	BD	BD	BD
	87-05-26	BD	BD	BD	56	88	6	BD	BD	BD	3	BD

Station Number	Date of Collection	HCB ng/g dry	HCBD ng/g dry	Alpha BHC ng/g dry	Beta BHC ng/g dry	Gamma BHC ng/g dry	HCE ng/g dry	Total Ignition % dry wt	Mirex ng/g dry	OCS ng/g dry	OP-DDT ng/g dry	Oxychlordane ng/g dry
001	87-05-12	BD	1	5	2	BD	1	43	BD	BD	BD	BD
	87-05-21	0	1	BD	4	BD	1	53	BD	BD	BD	1
	87-05-26	0	BD	3	0	1	BD	49	BD	BD	BD	BD
002	87-05-12	1	2	3	3	2	2	63	BD	0	5	0
	87-05-21	3	BD	3	2	3	0	61	BD	BD	17	BD
	87-05-26	2	BD	1	1	1	BD	55	BD	BD	9	23
003	87-05-12	1	0	BD	BD	6	0	56	BD	BD	11	BD
	87-05-21	1	2	7	1	2	5	55	BD	BD	9	BD
004	87-05-12	2	0	4	1	10	BD	42	BD	BD	2	BD
005	87-05-12	1	3	BD	BD	25	2	65	BD	BD	BD	BD
	87-05-21	4	2	6	5	3	BD	59	BD	BD	4	BD
006	87-05-12	BD	4	BD	6	10	1	67	BD	BD	BD	BD
	87-05-21	BD	BD	BD	BD	12	1	67	BD	BD	BD	BD
	87-05-26	1	1	1	BD	13	2	65	BD	BD	4	BD

Table 10: cont.

Station Number	Date of Collection	PNCB ng/g dry	PCPH ng/g dry	Total PCB ng/g dry	PP-DDD ng/g dry	PP-DDE ng/g dry	PP-DDT ng/g dry	1,2,3,4-TCB ng/g dry	1,2,3,5-TCB ng/g dry	1,2,4,5-TCB ng/g dry	2,3,4,5-TCP ng/g dry	2,3,5,6-TCP ng/g dry
001	87-05-12	1	BD	BD	BD	2	BD	BD	1	1	BD	BD
	87-05-21	0	BD	BD	BD	1	BD	BD	1	1	BD	BD
	87-05-26	1	BD	BD	BD	1	BD	1	BD	BD	BD	BD
002	87-05-12	1	BD	BD	BD	4	13	2	2	3	BD	BD
	87-05-21	BD	BD	BD	53	23	103	2	BD	BD	BD	BD
	87-05-26	BD	BD	82	20	15	25	BD	BD	BD	BD	BD
003	87-05-12	2	BD	BD	10	13	25	BD	1	1	BD	BD
	87-05-21	3	BD	BD	32	23	67	12	2	8	BD	BD
004	87-05-12	BD	BD	BD	10	19	32	BD	BD	BD	BD	BD
005	87-05-12	BD	BD	BD	7	9	10	BD	5	2	BD	BD
	87-05-21	3	BD	BD	10	26	23	6	BD	3	BD	BD
006	87-05-12	2	BD	BD	12	4	BD	BD	1	1	BD	BD
	87-05-21	BD	BD	BD	5	8	27	BD	BD	BD	BD	BD
	87-05-26	BD	BD	BD	10	1	25	BD	BD	BD	BD	BD

Station Number	Date of Collection	1,2,3-TCB ng/g dry	1,2,4-TCB ng/g dry	1,3,5-TCB ng/g dry	2,3,4-TCP ng/g dry	2,4,5-TCP ng/g dry	2,4,6-TCP ng/g dry	2,3,6-TCT ng/g dry	2,4,5-TCT ng/g dry	2,6,A-TCT ng/g dry
001	87-05-12	BD	6	4	BD	BD	BD	4	3	BD
	87-05-21	BD	3	5	BD	BD	BD	BD	1	1
	87-05-26	BD	2	BD	BD	BD	BD	BD	BD	BD
002	87-05-12	1	26	5	BD	BD	BD	BD	BD	2
	87-05-21	BD	3	BD	BD	BD	BD	BD	BD	BD
	87-05-26	BD	2	BD	BD	BD	BD	BD	BD	BD
003	87-05-12	BD	BD	4	BD	BD	BD	4	3	BD
	87-05-21	BD	2	7	BD	BD	BD	BD	BD	BD
004	87-05-12	BD	BD	2	BD	BD	BD	BD	BD	BD
005	87-05-12	BD	4	15	BD	BD	BD	14	7	4
	87-05-21	BD	15	BD	BD	BD	BD	BD	9	4
006	87-05-12	BD	6	28	BD	BD	BD	BD	17	BD
	87-05-21	BD	BD	BD	BD	BD	BD	BD	BD	BD
	87-05-26	BD	BD	BD	BD	BD	BD	BD	BD	BD

Table 11: *Cladophora* Collection Data for Lake Ontario

Station Number	Date of Collection	Aldrin ng/g dry	Alpha Chlordane ng/g dry	Gamma Chlordane ng/g dry	Dieldrin ng/g dry	DMDT ng/g dry	Endosulfan S ng/g dry	Endosulfan I ng/g dry	Endosulfan II ng/g dry	Endrin ng/g dry	HEPT ng/g dry	HEPE ng/g dry
304	85–06–27	BD	BD	BD	60	10	47	17	BD	BD	BD	37
319	86–06–23	BD	BD	BD	3	BD	BD	BD	BD	BD	BD	BD
	87–06–19	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
	88–06–08	BD	BD	2	BD	17	BD	BD	BD	BD	BD	BD
	89–07–06	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD

Station Number	Date of Collection	HCB ng/g dry	HCBD ng/g dry	Alpha BHC ng/g dry	Beta BHC ng/g dry	Gamma BHC ng/g dry	HCE ng/g dry	Mirex ng/g dry	OCS ng/g dry	OP–DDT ng/g dry	Oxychlidane ng/g dry	PNCB ng/g dry
304	85–06–27	2	BD	40	2	BD	BD	BD	5	BD	BD	BD
319	86–06–23	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
	87–06–19	BD	63	BD	BD	BD	5	BD	4	BD	BD	28
	88–06–08	BD	BD	3	BD	BD	BD	BD	BD	BD	BD	54
	89–07–06	BD	BD	2	BD	BD	BD	BD	BD	BD	BD	BD

Station Number	Date of Collection	PCPH ng/g dry	PP–DDD ng/g dry	PP–DDE ng/g dry	PP–DDT ng/g dry	1,2,3,4–TCB ng/g dry	1,2,3,5–TCB ng/g dry	1,2,4,5–TCB ng/g dry	2,3,4,5–TCP ng/g dry	2,3,5,6–TCP ng/g dry	1,2,3–TCB ng/g dry	1,2,4–TCB ng/g dry
304	85–06–27	BD	BD	4	BD	BD	BD	BD	BD	BD	BD	BD
319	86–06–23	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
	87–06–19		BD	BD	BD	8	BD	BD			BD	8
	88–06–08	152	BD	BD	BD	60	BD	BD	20	122	BD	BD
	89–07–06		BD	BD	BD	BD	BD	BD			BD	BD

Table 11: cont.

Station Number	Date of Collection	1,3,5– TCB ng/g dry	2,3,4– TCP ng/g dry	2,4,5– TCP ng/g dry	2,4,6– TCP ng/g dry	2,3,6– TCT ng/g dry	2,4,5– TCT ng/g dry	2,6,A– TCT ng/g dry
304	85–06–27	1	BD	BD	BD	BD	BD	BD
319	86–06–23	BD	BD	BD	BD	BD	BD	BD
	87–06–19	4				16	1	BD
	88–06–08	BD	415	83	94	BD	BD	BD
	89–07–06	BD				BD	BD	BD

Table 12: *Cladophora* Collection Data for Lake Ontario (Total Ignition and PCB's)

Station Number	Date of Collection	Total PCB ng/g dry	Total Ignition % dry wt	Station Number	Date of Collection	Total PCB ng/g dry	Total Ignition % dry wt
304	81-06-17	150	84	326	81-06-18	157	76
	81-07-25	48	64		81-07-23	88	86
	81-08-21	72	79		81-08-19	39	84
	82-06-22	250	58		82-06-22	83	72
	83-06-30	70	66		83-06-30	57	76
	84-06-29	244	53		84-06-27	84	69
	85-06-27	117			85-06-27	0	75
306	85-06-24	0	77	391	81-06-01		33
317	81-06-16	105	81		81-06-09		43
	81-07-22	145	70		81-06-15		51
	82-06-21	55	81		81-06-23		39
	83-06-27	33	69		81-07-03		71
	84-06-26	15	73		81-07-08		41
	85-06-24	22	77		81-07-13		32
318	81-06-16	182	64		81-07-22		30
	81-07-22	46	60		81-07-26		50
	81-08-18	65	62		81-08-02		56
	82-06-21	77	72		81-08-10		46
319	81-06-16	50	79		81-08-24		42
	81-07-22	88	71		81-09-15		58
	81-08-18	30	77		81-09-21		53
	82-06-21	67	77		81-10-13		49
	83-06-27	19	78		82-06-08		43
	84-06-26	13	73		82-06-10		54
	85-06-24	0	78		82-06-14		54
	86-06-23		73		82-06-17		55
	87-06-19	0	74		82-06-21		54
	88-06-08	0	77		82-06-24		46
	89-07-06	0	75		82-06-28		46
320	81-06-16	80	74		82-07-01		43
	81-07-22	55	77		82-07-05		46
321	81-06-16	58	81		82-07-12		34
	81-07-22	42	69		82-07-15		40
	81-08-17	97	82		82-07-19		43
	82-06-21	82	80		82-07-22		38
	83-06-27	35	78		82-07-26		36
	84-06-26	0	65		82-07-30		41
	85-06-24	0	79		82-08-03		54
322	81-06-17	135	91		82-08-06		49
	81-07-22	30	81		82-08-13		49
		57	62		82-08-20		49
	81-08-17	80	82		82-08-26		47
		32	73		83-05-30	0	63
	82-06-21	88	83		83-06-03	0	63
	83-06-27	0	64		83-06-07	63	46
	84-06-26	243	63		83-06-10	67	44
	85-06-24	0	80		83-06-13	13	36
323	81-06-17	33	50		83-06-17	12	37
324	81-06-17	65	75		83-06-21	0	38
	81-07-25	53	60		83-06-24	62	38
	81-08-20	68	72		83-06-27	68	35
		60	52		83-06-30	40	59
	82-06-22	59	49		83-07-04	257	57
	83-06-30	33	55		83-07-07	153	56
	84-06-29	0	56		83-07-11	0	57
	85-06-27	0	64		83-07-14	90	56
325	81-06-18	97	84		83-07-19	13	49
	81-07-23	62	61		83-07-22	7	45
	81-08-19	47	78		83-07-26	68	38
	82-06-22	163	83		83-08-03	0	45
	83-06-30	146	71		83-08-15	167	53
	84-06-27	42	68		83-08-22	178	43
	85-06-27	0	77		83-08-29	43	33

Table 13: *Cladophora* Collection Data for the Niagara River

Station Number	Date of Collection	Aldrin ng/g dry	Alpha Chlordane ng/g dry	Gamma Chlordane ng/g dry	Dieldrin ng/g dry	DMDT ng/g dry	Endosulfan S ng/g dry	Endosulfan I ng/g dry
402	86-06-23	BD	BD	BD	BD	BD	BD	BD
	87-06-18	BD	BD	BD	BD	BD	BD	BD
	88-06-22	BD	BD	BD	BD	BD	BD	BD
	89-07-04	BD	BD	BD	BD	BD	BD	BD
406	88-06-22	BD	BD	BD	BD	BD	BD	BD
	89-07-04	BD	BD	BD	BD	BD	BD	BD
407	87-06-16	BD	BD	BD	BD	BD	BD	BD
408	87-06-17	BD	BD	BD	BD	BD	BD	BD
	88-06-22	BD	BD	BD	BD	BD	BD	BD
	89-07-04	BD	BD	BD	BD	BD	7	BD
410	87-06-17	BD	BD	BD	BD	BD	BD	BD
	88-06-21	BD	BD	BD	BD	BD	BD	BD
	89-07-05	BD	BD	BD	29	63	15	BD
411	87-06-17	BD	BD	BD	BD	BD	BD	BD
	88-06-21	BD	BD	BD	6	8	BD	BD
	89-07-05	BD	BD	BD	14	38	25	BD
412	85-06-26	BD	1	BD	51	90	85	24
	87-06-18	BD	10	1	32	78	BD	22
	88-06-21	BD	BD	BD	12	25	14	BD
	89-07-05	BD	BD	BD	17	82	40	BD
413	87-06-18	BD	BD	BD	15	BD	BD	BD
	88-06-21	BD	BD	BD	2	5	4	BD
414	87-06-18	BD	BD	BD	8	20	20	13
415	85-06-26	BD	1	0	12	64	11	7
	87-06-18	BD	BD	BD	10	47	27	7
	88-06-21	BD	BD	BD	3	BD	5	3
	89-07-05	BD	BD	BD	12	42	BD	BD
420	87-06-15	BD	BD	BD	BD	BD	BD	BD
421	85-06-26	BD	12	4	60	170	74	46
	87-06-18	BD	BD	BD	20	142	47	23
	88-06-21	BD	2	2	BD	155	37	BD
422	87-06-16	BD	BD	BD	BD	BD	BD	BD
429	87-06-18	BD	BD	BD	18	BD	BD	24
438	87-06-17	BD	BD	BD	BD	BD	BD	BD
439	87-06-17	BD	BD	BD	BD	BD	BD	BD
440	87-06-15	BD	BD	BD	BD	BD	BD	BD
441	87-06-15	BD	BD	BD	BD	BD	BD	BD
442	87-06-15	BD	BD	BD	BD	BD	BD	BD
443	87-06-15	BD	BD	BD	BD	BD	BD	BD
444	87-06-15	BD	BD	BD	BD	BD	BD	BD
445	87-06-15	BD	BD	BD	BD	BD	BD	BD
446	87-06-16	BD	BD	BD	BD	BD	BD	BD
447	87-06-16	BD	BD	BD	BD	BD	BD	BD
448	87-06-16	BD	BD	BD	BD	BD	BD	BD
449	87-06-16	BD	BD	BD	BD	BD	BD	BD
450	87-06-16	BD	BD	BD	BD	BD	BD	BD
451	87-06-16	BD	BD	BD	BD	BD	BD	BD
	88-06-22	BD	BD	BD	BD	BD	BD	BD
	89-07-04	BD	BD	BD	BD	BD	BD	BD
452	87-06-18	BD	BD	BD	BD	BD	BD	BD
453	87-06-17	BD	BD	BD	BD	BD	BD	BD
	88-06-21	BD	BD	BD	3	BD	BD	2
454	87-06-17	BD	BD	BD	BD	BD	BD	BD
455	87-06-17	BD	BD	BD	BD	BD	BD	BD
456	87-06-17	BD	BD	BD	BD	BD	BD	BD
457	87-06-17	BD	BD	BD	BD	BD	BD	BD
458	87-06-18	BD	BD	BD	38	BD	BD	28

Table 13: cont.

Station Number	Date of Collection	Endosulfan II ng/g dry	Endrin ng/g dry	HEPT ng/g dry	HEPE ng/g dry	HCB ng/g dry	HCBD ng/g dry	Alpha BHC ng/g dry
402	81-06-18					BD		
	81-07-23					BD		
	86-06-23	BD	BD	BD	BD		BD	BD
	87-06-18	BD	BD	BD	BD	BD	31	BD
	88-06-22	BD	BD	BD	BD	BD	6	2
	89-07-04	BD	BD	BD	BD	BD	BD	4
406	88-06-22	BD	BD	BD	BD	BD	3	BD
	89-07-04	BD	BD	BD	BD	4	2	7
407	87-06-16	BD	BD	BD	BD	2		BD
408	87-06-17	BD	BD	BD	BD	BD	BD	BD
	88-06-22	BD	BD	BD	BD	3	5	6
	89-07-04	BD	2	BD	2	1	1	2
410	87-06-17	BD	BD	BD	BD	BD	5	BD
	88-06-21	BD	BD	BD	BD	2	3	3
	89-07-05	6	BD	BD	7	9	2	BD
411	87-06-17	BD	BD	BD	BD	BD	12	BD
	88-06-21	2	BD	BD	3	4	10	7
	89-07-05	BD	BD	BD	42	7	4	3
412	85-06-26	BD	BD	BD	23	44		1048
	87-06-18	27	13	BD	19	176	BD	592
	88-06-21	BD	BD	BD	3	190	9	5701
	89-07-05	2	11	BD	12	95	1	1123
413	87-06-18	7	15	BD	12	4	BD	1
	88-06-21	BD	BD	BD	4	17	21	17
414	87-06-18	15	BD	BD	7	5	3	3
415	85-06-26	BD	8	22	23	32		
	87-06-18	15	BD	BD	14	53	65	8
	88-06-21	5	BD	BD	3	422	882	1690
	89-07-05	7	10	BD	8	2948	2278	1360
420	87-06-15	BD	BD	BD	BD	BD		BD
421	85-06-26	87	36	BD	31	285	125	65
	87-06-18	29	BD	BD	20	37	9	1
	88-06-21	3	BD	BD	BD	222	35	9
422	87-06-16	BD	BD	BD	BD	BD		BD
429	87-06-18	7	47	BD	14	354	324	2
438	87-06-17	BD	BD	BD	BD	2	7	BD
439	87-06-17	BD	BD	BD	BD	184	4	BD
440	87-06-15	BD	BD	BD	BD	BD		BD
441	87-06-15	BD	BD	BD	BD	BD		BD
442	87-06-15	BD	BD	BD	BD	BD		BD
443	87-06-15	BD	BD	BD	BD	BD		BD
444	87-06-15	BD	BD	BD	BD	BD		BD
445	87-06-15	BD	BD	BD	BD	BD		BD
446	87-06-16	BD	BD	BD	BD	BD		BD
447	87-06-16	BD	BD	BD	BD	BD		BD
448	87-06-16	BD	BD	BD	BD	BD		BD
449	87-06-16	BD	BD	BD	BD	2		BD
450	87-06-16	BD	BD	BD	BD	BD		BD
451	87-06-16	BD	BD	BD	BD	BD	BD	BD
	88-06-22	BD	BD	BD	BD	BD	5	BD
	89-07-04	BD	BD	BD	BD	6	3	3
452	87-06-18	BD	BD	BD	BD	BD	BD	BD
453	87-06-17	BD	BD	BD	BD	BD		BD
	88-06-21	BD	BD	BD	3	2	3	3
454	87-06-17	BD	BD	BD	BD	1		BD
455	87-06-17	BD	BD	BD	BD	1		BD
456	87-06-17	BD	BD	BD	BD	BD	9	BD
457	87-06-17	BD	BD	BD	BD	3		BD
458	87-06-18	13	34	BD	17	8	BD	BD

Table 13: cont.

Station Number	Date of Collection	Beta BHC ng/g dry	Gamma BHC ng/g dry	HCE ng/g dry	Mirex ng/g dry	OCS ng/g dry	OP-DDT ng/g dry	Oxychlidane ng/g dry
402	81-06-18			BD		BD		
	81-07-23			BD		BD		
	81-08-19			15		8		
	82-06-22			3		BD		
	83-06-28			BD		BD		
	86-06-23	BD	BD		BD		BD	BD
	87-06-18	BD	BD		BD		BD	BD
	88-06-22	BD	BD		BD		BD	BD
	89-07-04	BD	BD		BD		BD	BD
406	88-06-22	BD	BD	2	BD	BD	BD	BD
	89-07-04	BD	BD	4	BD	6	BD	BD
407	87-06-16	BD	BD		BD		BD	BD
408	87-06-17	BD	BD	7	BD	14	BD	BD
	88-06-22	BD	BD	2	BD	BD	BD	BD
	89-07-04	BD	BD	3	BD	6	BD	2
410	87-06-17	BD	BD	8	BD	4	BD	BD
	88-06-21	BD	BD	2	BD	BD	BD	BD
	89-07-05	BD	BD	1	BD	10	BD	3
411	87-06-17	BD	BD	5	BD	BD	BD	BD
	88-06-21	BD	BD	4	BD	2	BD	1
	89-07-05	BD	BD	1	BD	8	BD	BD
412	85-06-26	158	488		BD		BD	BD
	87-06-18	357	45	10	27	16	BD	4
	88-06-21	33	16	5	BD	23	BD	9
	89-07-05	422	50	BD	BD	40	BD	BD
413	87-06-18	1	BD	3	40	11	BD	BD
	88-06-21	BD	BD	3	BD	13	BD	BD
414	87-06-18	6	BD	1	BD	2	BD	7
415	85-06-26	425	40	4	1	39	BD	23
	87-06-18	25	1	2	BD	3	BD	8
	88-06-21	290	3	16	BD	393	BD	BD
	89-07-05	1543	27	21	BD	2652	BD	2
420	87-06-15	BD	BD		BD		BD	BD
421	85-06-26	BD	50	BD	BD	29	BD	BD
	87-06-18	BD	BD	2	BD	1	BD	18
	88-06-21	5	BD	8	BD	64	3	BD
422	87-06-16	BD	BD		BD		BD	BD
429	87-06-18	1	BD	10	263	173	BD	BD
438	87-06-17	BD	BD	4	BD	BD	BD	BD
439	87-06-17	BD	BD	35	BD	5	BD	BD
440	87-06-15	BD	BD		BD		BD	BD
441	87-06-15	BD	BD		BD		BD	BD
442	87-06-15	BD	BD		BD		BD	BD
443	87-06-15	BD	BD		BD		BD	BD
444	87-06-15	BD	BD		BD		BD	BD
445	87-06-15	BD	BD		BD		BD	BD
446	87-06-16	BD	BD		BD		BD	BD
447	87-06-16	BD	BD		BD		BD	BD
448	87-06-16	BD	BD		BD		BD	BD
449	87-06-16	BD	BD		BD		BD	BD
450	87-06-16	BD	BD		BD		BD	BD
451	87-06-16	BD	BD	12	BD	12	BD	BD
	88-06-22	BD	BD	3	BD	BD	BD	BD
	89-07-04	BD	BD	1	BD	10	BD	BD
452	87-06-18	BD	BD	2	BD	2	BD	BD
453	87-06-17	BD	BD		BD		BD	BD
	88-06-21	BD	BD	4	BD	2	BD	BD
454	87-06-17	BD	BD		BD		BD	BD
455	87-06-17	BD	BD		BD		BD	BD
456	87-06-17	BD	BD	4	BD	BD	BD	BD
457	87-06-17	BD	BD		BD		BD	BD
458	87-06-18	BD	BD	6	57	8	BD	BD

Table 13: cont.

Station Number	Date of Collection	PNCB ng/g dry	PCPH ng/g dry	PP-DDD ng/g dry	PP-DDE ng/g dry	PP-DDT ng/g dry	1,2,3,4-TCB ng/g dry	1,2,3,5-TCB ng/g dry
402	81-06-18	BD					BD	BD
	81-07-23	BD					BD	BD
	81-08-19	17					5	BD
	82-06-22	2					BD	BD
	83-06-28	BD					BD	BD
	86-06-23		BD	BD	BD	BD		
	87-06-18		BD	BD	BD	BD		
	88-06-22		BD	BD	BD	BD		
	89-07-04			BD	BD	BD		
406	88-06-22	5	BD	BD	BD	BD	4	BD
	89-07-04	2		BD	BD	BD	2	BD
407	82-06-24				23			
	84-06-27				23			
	87-06-16		BD	BD	20	BD		
408	87-06-17	18	BD	BD	BD	BD	41	9
	88-06-22	12	BD	BD	BD	BD	3	BD
	89-07-04	2		BD	BD	BD	2	BD
410	87-06-17	12	BD	BD	3	BD	19	7
	88-06-21	BD	BD	BD	BD	BD	BD	BD
	89-07-05	3		BD	BD	BD	BD	1
411	87-06-17	4	BD	BD	BD	BD	3	1
	88-06-21	2	BD	BD	BD	BD	BD	BD
	89-07-05	3		BD	BD	BD	2	BD
412	85-06-26			BD	3	2		
	87-06-18	1587	BD	5	32	BD	138	118
	88-06-21	1525	BD	BD	BD	BD	884	77
	89-07-05	523		BD	BD	BD	583	52
413	87-06-18	3	BD	BD	9	BD	5	BD
	88-06-21	11	BD	BD	BD	BD	7	1
414	87-06-18	1		BD	BD	BD	1	0
415	85-06-26	7	BD	1	10	BD	16	BD
	87-06-18	6		BD	34	BD	5	3
	88-06-21	30	BD	BD	BD	BD	36	8
	89-07-05	59		BD	BD	BD	56	13
420	87-06-15			BD	BD	BD		
421	85-06-26	560						
	87-06-18	28		BD	4	BD	16	6
	88-06-21	303	BD	BD	BD	2	111	43
422	87-06-16			BD	BD	BD		
429	87-06-18	252		BD	73	BD	129	17
438	87-06-17	5	BD	BD	BD	BD	7	3
439	87-06-17	158	BD	BD	7	BD	53	49
440	87-06-15			BD	BD	BD		
441	87-06-15			BD	BD	BD		
442	87-06-15			BD	BD	BD		
443	87-06-15			BD	BD	BD		
444	87-06-15			BD	BD	BD		
445	87-06-15			BD	BD	BD		
446	87-06-16			BD	BD	BD		
447	87-06-16			BD	3	BD		
448	87-06-16			BD	BD	BD		
449	87-06-16			BD	12	BD		
450	87-06-16			BD	8	BD		
451	87-06-16	17	BD	BD	36	BD	6	14
	88-06-22	5	BD	BD	BD	BD	4	BD
	89-07-04	3		BD	BD	BD	3	BD
452	87-06-18	7	BD	BD	10	BD	1	2
453	87-06-17		BD	BD	BD	BD		
	88-06-21	4	BD	BD	BD	BD	BD	2
454	87-06-17			BD	BD	BD		
455	87-06-17			BD	9	BD		
456	87-06-17	3	BD	BD	BD	BD	1	BD
457	87-06-17		BD	BD	2	BD		
458	87-06-18	28		BD	17	BD	7	4

Table 13: cont.

Station Number	Date of Collection	1,2,4,5– TCB ng/g dry	2,3,4,5– TCP ng/g dry	2,3,5,6– TCP ng/g dry	1,2,3– TCB ng/g dry	1,2,4– TCB ng/g dry	1,3,5– TCB ng/g dry	2,3,4– TCP ng/g dry
402	81–06–18				BD			
	81–07–23				BD			
	81–08–19				BD			
	82–06–22				BD			
	83–06–28				BD			
	86–06–23	BD	BD	BD		BD	BD	BD
	87–06–18	BD	BD	BD		38	3	BD
	88–06–22	BD	BD	BD		4	BD	BD
	89–07–04	BD				BD	BD	
406	88–06–22	BD	BD	BD	BD	1	BD	BD
	89–07–04	BD			2	15	8	
407	87–06–16		BD	BD				BD
408	87–06–17	5	BD	BD	BD	33	8	BD
	88–06–22	BD	BD	BD	BD	3	BD	BD
	89–07–04	BD			3	11	7	
410	87–06–17	5	BD	BD	6	41	23	BD
	88–06–21	BD	BD	BD	BD	2	BD	BD
	89–07–05	BD			BD	7	10	
411	87–06–17	1	BD	BD	BD	18	5	BD
	88–06–21	BD	BD	BD	BD	9	5	BD
	89–07–05	BD			BD	8	11	
412	87–06–18	192	BD	BD	69	16	19	BD
	88–06–21	148	BD	BD	18	176	33	BD
	89–07–05	112			27	60	29	
413	87–06–18	BD	BD	BD	BD	BD	5	BD
	88–06–21	2	BD	BD	BD	15	5	BD
414	87–06–18	1			BD	2	BD	
415	85–06–26	BD	BD	BD	13	BD	BD	BD
	87–06–18	6			4	28	7	
	88–06–21	38	BD	BD	47	340	57	BD
	89–07–05	56			50	356	108	
421	85–06–26						BD	BD
	87–06–18	7			BD	10	4	
	88–06–21	32	BD	BD	8	103	BD	BD
429	87–06–18	17			11	86	18	
438	87–06–17	3	BD	BD	BD	24	BD	BD
439	87–06–17	23	BD	BD	128	135	32	BD
451	87–06–16	6	BD	BD	4	49	28	BD
	88–06–22	BD	BD	BD	BD	3	BD	BD
	89–07–04	BD			3	5	4	
452	87–06–18	1	BD	BD	BD	14	BD	BD
453	87–06–17		BD	BD				BD
	88–06–21	BD	BD	BD	BD	12	3	BD
456	87–06–17	BD	BD	BD	BD	11	3	BD
457	87–06–17		BD	BD				BD
458	87–06–18	7			9	10	3	

Table 13: cont.

Station Number	Date of Collection	2,4,5– TCP ng/g dry	2,4,6– TCP ng/g dry	2,3,6– TCT ng/g dry	2,4,5– TCT ng/g dry	2,6,A– TCT ng/g dry
402	81–06–18			BD	BD	BD
	81–07–23			BD	BD	BD
	81–08–19			14	7	BD
	82–06–22			BD	BD	BD
	83–06–28			BD	BD	BD
	86–06–23	BD	BD			
	87–06–18	BD	BD			
	88–06–22	BD	BD			
	89–07–04					
406	88–06–22	BD	BD	BD	BD	BD
	89–07–04			2	3	2
407	87–06–16	BD	BD			
408	87–06–17	BD	BD	20	19	BD
	88–06–22	BD	BD	BD	BD	BD
	89–07–04			3	9	BD
410	87–06–17	BD	BD	30	24	7
	88–06–21	BD	BD	BD	BD	BD
	89–07–05			4	5	4
411	87–06–17	BD	BD	13	10	3
	88–06–21	BD	BD	4	BD	BD
	89–07–05			BD	BD	BD
412	87–06–18	BD	BD	72	78	27
	88–06–21	BD	BD	24	43	9
	89–07–05			7	BD	BD
413	87–06–18	BD	BD	10	9	7
	88–06–21	BD	BD	4	2	BD
414	87–06–18			BD	BD	BD
415	85–06–26	BD	BD	0	BD	BD
	87–06–18			2	BD	1
	88–06–21	BD	BD	8	4	10
	89–07–05			BD	BD	BD
421	85–06–26	BD	85	1350	170	BD
	87–06–18			18	14	1
	88–06–21	BD	BD	131	70	6
429	87–06–18			139	122	19
438	87–06–17	BD	BD	30	16	6
439	87–06–17	BD	BD	23	19	9
451	87–06–16	BD	BD	26	10	BD
	88–06–22	BD	BD	BD	BD	BD
	89–07–04			BD	19	3
452	87–06–18	BD	BD	6	2	BD
453	87–06–17	BD	BD			
	88–06–21	BD	BD	3	4	2
456	87–06–17	BD	BD	7	14	3
457	87–06–17	BD	BD			
458	87–06–18			30	19	31

Table 14: *Cladophora* Collection Data for the Niagara River (Total Ignition and PCB's)

Station Number	Date of Collection	Total PCB ng/g dry	Total Ignition % dry wt
401	81-06-18	60	75
	81-07-23	43	68
	81-08-19	37	70
	82-06-22	63	71
402	81-06-18	52	73
	81-07-23	32	76
	81-08-19	37	73
	82-06-22	58	59
	83-06-28	57	58
	84-06-27	88	63
	85-06-25	0	61
	86-06-23	73	68
	87-06-18	0	69
	88-06-22	0	71
	89-07-04	0	78
403	81-06-18	53	71
	81-07-23	12	36
	82-06-23	42	59
404	81-06-18	30	65
	81-07-23	47	44
	82-06-22	58	53
405	81-06-18	32	84
	81-07-23	37	62
	81-08-19	40	67
	82-06-23	40	49
406	81-06-18	20	69
	81-07-23	25	70
	81-08-19	66	67
	83-06-28	29	63
	84-06-27	77	59
	85-06-25	0	67
	88-06-22	0	62
	89-07-04	0	65
407	81-06-18	62	74
	81-07-23	22	76
	81-08-19	20	83
	82-06-24	39	64
		45	
	84-06-27	78	57
	85-06-25	0	67
	87-06-16	90	77
408	83-06-28	8	69
	84-06-27	133	50
	85-06-25	0	67
	87-06-17	0	68
	88-06-22	8	73
	89-07-04	0	63
409	81-06-19	93	63
	81-07-24	239	65
	82-06-24	90	55
410	81-06-19	168	62
	81-07-24	47	69
	81-08-19	52	68
	82-06-24	82	50
	84-06-28	69	58
	85-06-26	0	56
	87-06-17	18	56
	88-06-21	0	70
	89-07-05	470	55
411	81-06-19	160	62
	81-07-24	105	76
	81-08-20	87	69
	82-06-24	85	45
	84-06-28	95	53
	85-06-26	0	62
	87-06-17	0	73
	88-06-21	0	78
	89-07-05	153	81
412	81-06-19	358	58
	81-07-24	157	79
	81-08-20	604	54
	82-06-24	375	65
	83-06-29	152	58
	84-06-28	280	32
	85-06-26	347	
	87-06-18	1293	64
	88-06-21	1058	48
	89-07-05	782	37
413	81-06-19	463	78
	82-06-24	578	78
	83-06-29	237	68
	84-06-28	162	58
	85-06-26	120	71
	87-06-18	313	67
	88-06-21	463	72
414	81-08-20	25	55
	83-06-29	143	73
	87-06-18	0	72
415	81-07-24	1901	73
	81-08-20	6986	51
	82-06-24	16333	65
	83-06-29	4127	73
	84-06-28	4988	63
	85-06-26	4798	61
	87-06-18	2233	63
	88-06-21	12742	71
	89-07-05	80850	42
416	81-06-19	68	65
	81-07-24	42	72
	81-08-20	38	71
	82-06-23	50	53
417	81-06-19	68	70
	81-07-24	47	69
	81-08-20	72	73
	82-06-23	50	54
418	81-06-19	145	70
	81-07-24	50	75
	81-08-20	33	74
	82-06-23	52	49
419	81-06-19	133	68
	81-07-24	52	72
	81-08-20	34	78
	82-06-23	77	55
420	82-06-24	63	71
	87-06-15	0	66

Table 14: cont.

Station Number	Date of Collection	Total PCB ng/g dry	Total Ignition % dry wt
421	82-07-17	1810	71
	83-06-29	737	71
	84-06-28	0	70
	85-06-26	165	
	87-06-18	33	67
	88-06-21	0	60
422	87-06-16	0	68
424	83-06-29	88	80
425	83-06-28	27	64
426	83-06-28	191	72
427	83-06-29	180	72
428	83-06-29	87	78
429	83-06-29	125	70
	87-06-18	1337	69
430	83-06-29	163	78
431	83-06-29	150	48
438	87-06-17	27	65
439	87-06-17	0	48
440	87-06-15	0	64
441	87-06-15	0	51
442	87-06-15	9	65
443	87-06-15	32	62
444	87-06-15	0	59
445	87-06-15	0	67
446	87-06-16	23	70
447	87-06-16	40	75
448	87-06-16	23	70
449	87-06-16	78	76
450	87-06-16	28	71
451	85-06-25	0	70
	87-06-16	52	69
	88-06-22	0	65
	89-07-04	0	74
452	87-06-18	0	64
453	87-06-17	65	65
	88-06-21	0	67
454	87-06-17	115	73
455	87-06-17	33	73
456	87-06-17	0	65
457	87-06-17	87	58
458	87-06-18	673	77

Table 15: *Cladophora* Collection for Lake Erie

Station Number	Date of Collection	Aldrin ng/g dry	Alpha Chlordane ng/g dry	Gamma Chlordane ng/g dry	Dieldrin ng/g dry	DMDT ng/g dry	Endosulfan S ng/g dry	Endosulfan I ng/g dry	Endosulfan II ng/g dry	Endrin ng/g dry	HEPT ng/g dry	HEPE ng/g dry
501	86-07-03	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
	87-06-17	BD	BD	BD	10	80	17	20	BD	BD	BD	1
	88-06-22	BD	BD	1	BD	15	38	BD	3	BD	BD	BD
	89-07-04	BD	BD	BD	BD	BD	4	BD	BD	BD	BD	BD
502	88-06-16	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
503	88-06-15	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
505	88-06-15	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
506	88-06-15	BD	BD	2	BD	87	BD	BD	BD	BD	BD	BD
507	88-06-15	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
508	88-06-15	BD	BD	BD	BD	120	12	BD	BD	BD	BD	BD
509	88-06-15	BD	BD	BD	BD	358	47	BD	BD	BD	BD	BD
510	88-06-15	BD	BD	BD	BD	22	31	BD	BD	BD	BD	BD

Station Number	Date of Collection	HCB ng/g dry	HCBD ng/g dry	Alpha BHC ng/g dry	Beta BHC ng/g dry	Gamma BHC ng/g dry	HCE ng/g dry	Total Ignition % dry wt	Mirex ng/g dry	OCS ng/g dry	OP-DDT ng/g dry	Oxychlordane ng/g dry
501	81-06-18							71				
	81-07-23							64				
	81-08-19							67				
	82-06-23							66				
	83-06-28							62				
	84-06-27							63				
	85-06-25							72				
	86-07-03	BD	BD	BD	BD	BD	1	72	BD	BD	BD	BD
	87-06-17	BD	58	BD	BD	BD	3	70	BD	BD	BD	15
	88-06-22	4	7	BD	BD	BD	2	61	BD	BD	BD	BD
	89-07-04	BD	BD	3	BD	BD	BD	60	BD	BD	BD	BD
502	88-06-16	BD	6	1	BD	BD	5	69	BD	1	BD	BD
503	88-06-15	BD	5	BD	BD	BD	4	60	BD	1	BD	BD
505	88-06-15	BD	4	BD	BD	BD	2	69	BD	4	BD	BD
506	88-06-15	BD	17	BD	1	4	9	79	BD	7	BD	BD
507	88-06-15	BD	13	BD	BD	BD	11	72	BD	8	BD	BD
508	88-06-15	BD	8	BD	BD	BD	3	82	BD	6	BD	BD
509	88-06-15	2	8	BD	BD	BD	7	85	BD	3	BD	BD
510	88-06-15	5	10	BD	BD	BD	6	78	BD	BD	BD	BD

Table 15: cont.

Station Number	Date of Collection	PNCB ng/g dry	PCPH ng/g dry	Total PCB ng/g dry	PP–DDD ng/g dry	PP–DDE ng/g dry	PP–DDT ng/g dry	1,2,3,4–TCB ng/g dry	1,2,3,5–TCB ng/g dry	1,2,4,5–TCB ng/g dry	2,3,4,5–TCP ng/g dry	2,3,5,6–TCP ng/g dry
501	81–06–18			53								
	81–07–23			28								
	81–08–19			38								
	82–06–23			20								
	83–06–28			30								
	84–06–27			68								
	85–06–25			BD								
	86–07–03	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
	87–06–17	3	BD	BD	BD	BD	BD	3	1	3	BD	BD
	88–06–22	5	BD	BD	BD	BD	BD	5	1	2	BD	BD
	89–07–04	BD		BD	BD	BD	BD	BD	BD	BD		
502	88–06–16	43	BD	BD	BD	BD	BD	32	6	12	BD	BD
503	88–06–15	4	BD	BD	BD	BD	BD	BD	1	BD	BD	BD
505	88–06–15	2	BD	BD	BD	BD	BD	BD	1	BD	BD	BD
506	88–06–15	10	BD	BD	BD	BD	BD	12	5	3	BD	BD
507	88–06–15	15	BD	BD	BD	BD	BD	11	7	10	BD	BD
508	88–06–15	8	BD	BD	BD	BD	BD	10	2	2	BD	BD
509	88–06–15	8	BD	BD	BD	BD	BD	8	7	5	BD	BD
510	88–06–15	16	BD	BD	BD	BD	BD	1	5	4	BD	BD

Station Number	Date of Collection	1,2,3–TCB ng/g dry	1,2,4–TCB ng/g dry	1,3,5–TCB ng/g dry	2,3,4–TCP ng/g dry	2,4,5–TCP ng/g dry	2,4,6–TCP ng/g dry	2,3,6–TCT ng/g dry	2,4,5–TCT ng/g dry	2,6,A–TCT ng/g dry
501	86–07–03	BD	BD	BD	BD	BD	BD	BD	BD	BD
	87–06–17	2	21	6	BD	BD	BD	2	BD	BD
	88–06–22	1	7	5	BD	BD	BD	46	24	4
	89–07–04	BD	BD	BD				BD	BD	BD
502	88–06–16	BD	8	5	BD	BD	BD	7	23	4
503	88–06–15	BD	6	5	BD	BD	BD	12	5	2
505	88–06–15	BD	3	4	BD	BD	BD	4	BD	BD
506	88–06–15	3	24	3	BD	BD	BD	28	10	3
507	88–06–15	4	12	BD	BD	BD	BD	41	16	11
508	88–06–15	BD	4	BD	BD	BD	BD	3	8	1
509	88–06–15	BD	41	BD	BD	BD	BD	52	7	3
510	88–06–15	BD	20	BD	BD	BD	BD	27	6	3

Table 16: *Cladophora* Collection Data for the Detroit River

Station Number	Date of Collection	Aldrin ng/g dry	Alpha Chlordane ng/g dry	Gamma Chlordane ng/g dry	Dieldrin ng/g dry	DMDT ng/g dry	Endosulfan S ng/g dry	Endosulfan I ng/g dry	Endosulfan II ng/g dry	Endrin ng/g dry	HEPT ng/g dry	HEPE ng/g dry
601	86-06-19	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
	87-06-10	BD	2	3	BD	BD	BD	BD	BD	BD	BD	BD
602	86-06-19	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
	87-06-10	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
	88-06-08	BD	BD	BD	BD	18	BD	BD	BD	BD	BD	BD
	88-06-15	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
603	86-06-20	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
	87-06-09	BD	1	BD	35	55	BD	BD	BD	BD	BD	BD
	88-06-08	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
	88-06-15	BD	7	11	BD	BD	BD	BD	BD	BD	BD	BD

Station Number	Date of Collection	HCB ng/g dry	HCBD ng/g dry	Alpha BHC ng/g dry	Beta BHC ng/g dry	Gamma BHC ng/g dry	HCE ng/g dry	Total Ignition % dry wt	Mirex ng/g dry	OCS ng/g dry	OP-DDT ng/g dry	Oxychlordane ng/g dry
601	86-06-19	BD	3	1	BD	BD	1	77	BD	BD	BD	BD
	87-06-10	1	1	1	1	BD	BD	78	BD	1	BD	BD
602	86-06-19	BD	1	BD	BD	BD	BD	73	BD	BD	BD	BD
	87-06-10	BD	3	BD	1	BD	1	69	BD	BD	BD	BD
	88-06-08	BD	BD	BD	BD	BD	BD	77	BD	BD	BD	BD
	88-06-15	BD	BD	1	BD	BD	BD	75	BD	BD	BD	BD
603	86-06-20	BD	BD	BD	BD	BD	BD	70	BD	BD	BD	BD
	87-06-09	BD	2	BD	1	BD	BD	78	BD	BD	BD	BD
	88-06-08	BD	7	BD	BD	BD	2	73	BD	3	BD	BD
	88-06-15	BD	4	BD	BD	BD	2	73	BD	BD	BD	BD

Table 16: cont.

Station Number	Date of Collection	PNCB ng/g dry	PCPH ng/g dry	Total PCB ng/g dry	PP–DDD ng/g dry	PP–DDE ng/g dry	PP–DDT ng/g dry	1,2,3,4–TCB ng/g dry	1,2,3,5–TCB ng/g dry	1,2,4,5–TCB ng/g dry	2,3,4,5–TCP ng/g dry	2,3,5,6–TCP ng/g dry
601	86–06–19	BD	BD	48	BD	2	BD	BD	BD	BD	BD	BD
	87–06–10	4	BD	BD	BD	BD	BD	1	1	1	BD	BD
602	86–06–19	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
	87–06–10	1	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
	88–06–08	BD	BD	BD	BD	BD	BD	3	BD	BD	BD	BD
	88–06–15	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
603	86–06–20	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
	87–06–09	1	BD	BD	BD	BD	BD	BD	1	1	BD	BD
	88–06–08	3	BD	BD	BD	BD	BD	2	BD	BD	BD	BD
	88–06–15	3	65	BD	BD	BD	BD	3	BD	BD	25	BD

Station Number	Date of Collection	1,2,3–TCB ng/g dry	1,2,4–TCB ng/g dry	1,3,5–TCB ng/g dry	2,3,4–TCP ng/g dry	2,4,5–TCP ng/g dry	2,4,6–TCP ng/g dry	2,3,6–TCT ng/g dry	2,4,5–TCT ng/g dry	2,6,A–TCT ng/g dry
601	86–06–19	BD	BD	BD	BD	BD	BD	BD	BD	BD
	87–06–10	BD	BD	BD	BD	BD	BD	BD	6	BD
602	86–06–19	BD	BD	BD	BD	BD	BD	BD	BD	BD
	87–06–10	BD	BD	BD	BD	BD	BD	6	8	1
	88–06–08	BD	BD	BD	BD	BD	BD	15	BD	BD
	88–06–15	BD	BD	BD	BD	BD	BD	BD	BD	BD
603	86–06–20	BD	BD	BD	BD	BD	BD	BD	BD	BD
	87–06–09	2	BD	BD	BD	BD	BD	BD	6	BD
	88–06–08	BD	3	BD	BD	BD	BD	2	1	BD
	88–06–15	BD	4	BD	108	35	65	BD	BD	BD

Table 17: *Cladophora* Collection Data for the St. Clair River

Station Number	Date of Collection	Aldrin ng/g dry	Alpha Chlordane ng/g dry	Gamma Chlordane ng/g dry	Dieldrin ng/g dry	DMDT ng/g dry	Endosulfan S ng/g dry	Endosulfan I ng/g dry	Endosulfan II ng/g dry	Endrin ng/g dry	HEPT ng/g dry	HEPE ng/g dry
708	86-07-22	BD	BD	BD	60	BD	3	BD	BD	BD	BD	17
	87-07-21	1	BD	BD	BD	BD	BD	BD	BD	11	BD	BD
	88-07-19	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
709	88-07-22	BD	BD	BD	33	BD	10	BD	BD	BD	BD	10
	86-09-17	BD	BD	BD	12	23	BD	BD	BD	BD	BD	BD
710	86-07-23	BD	BD	BD	37	BD	17	BD	BD	BD	BD	BD
	86-09-17	BD	BD	BD	30	BD	BD	BD	BD	BD	BD	BD
711	86-09-17	BD	BD	BD	23	BD	BD	BD	BD	BD	BD	5
712	86-07-23	BD	BD	BD	30	BD	27	33	33	BD	BD	10
713	86-07-23	BD	BD	BD	BD	BD	BD	3	BD	BD	BD	BD
	86-09-17	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
	87-07-21	1	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
	88-07-19	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
714	86-07-24	BD	BD	BD	15	20	BD	BD	30	BD	BD	BD
	88-07-19	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
715	86-07-24	BD	BD	BD	13	BD	BD	BD	3	BD	BD	BD
	86-09-18	BD	BD	BD	50	20	27	BD	7	BD	BD	13
	87-07-21	BD	BD	BD	BD	175	11	BD	BD	BD	BD	BD
	88-07-19	BD	BD	2	BD	BD	BD	BD	BD	BD	BD	BD
716	86-07-23	BD	BD	BD	17	BD	BD	BD	BD	BD	BD	BD

Table 17: cont.

Station Number	Date of Collection	HCB ng/g dry	HCBD ng/g dry	Alpha BHC ng/g dry	Beta BHC ng/g dry	Gamma BHC ng/g dry	HCE ng/g dry	Total Ignition % dry wt	Mirex ng/g dry	OCS ng/g dry	OP–DDT ng/g dry	Oxychldane ng/g dry
701	84–07–03							54				
702	84–07–03							53				
703	84–07–03							47				
704	84–07–03							44				
705	84–07–03							33				
708	86–07–22	BD	BD	BD	BD	BD	BD	72	BD	BD	BD	BD
	87–07–21	BD	1	BD	BD	BD	2	65	BD	BD	BD	BD
	88–07–19	BD	6	2	BD	BD	3	68	BD	6	BD	BD
709	88–07–22	BD	BD	BD	BD	BD	BD	58	BD	BD	BD	BD
	86–09–17	0	BD	BD	BD	BD	BD	58	BD	BD	BD	BD
710	86–07–23	BD	BD	BD	BD	1	BD	79	BD	BD	BD	25
	86–09–17	BD	BD	BD	BD	BD	BD	72	BD	BD	BD	BD
711	86–09–17	1	10	BD	BD	BD	BD	74	BD	3	BD	BD
712	86–07–23	50	10	BD	BD	1	BD	73	BD	13	BD	30
713	86–07–23	6	7	BD	BD	BD	BD	66	BD	3	BD	26
	86–09–17	20	1	BD	BD	BD	BD	66	BD	2	BD	BD
	87–07–21	14	3	BD	1	BD	2	72	BD	BD	BD	BD
	88–07–19	9	11	BD	1	BD	3	69	BD	12	BD	BD
714	86–07–24	BD	BD	BD	BD	BD	BD	59	BD	BD	BD	BD
	88–07–19	BD	4	BD	BD	BD	1	57	BD	1	BD	BD
715	86–07–24	3	4	BD	BD	1	BD	68	BD	3	BD	8
	86–09–18	1	2	BD	BD	BD	BD	71	BD	2	BD	13
	87–07–21	4	BD	BD	BD	BD	BD	71	BD	BD	BD	BD
	88–07–19	8	10	BD	BD	BD	3	64	BD	10	BD	BD
716	86–07–23	6	23	BD	BD	BD	BD	64	BD	1	BD	BD

Table 17: cont.

Station Number	Date of Collection	PNCB ng/g dry	PCPH ng/g dry	Total PCB ng/g dry	PP–DDD ng/g dry	PP–DDE ng/g dry	PP–DDT ng/g dry	1,2,3,4–TCB ng/g dry	1,2,3,5–TCB ng/g dry	1,2,4,5–TCB ng/g dry	2,3,4,5–TCP ng/g dry	2,3,5,6–TCP ng/g dry
701	84–07–03			60								
702	84–07–03			76								
703	84–07–03			177								
704	84–07–03			65								
705	84–07–03			BD								
708	86–07–22	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
	87–07–21	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
	88–07–19	2	BD	BD	BD	BD	BD	BD	1	BD	BD	BD
709	88–07–22	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
	86–09–17	BD	BD	BD	BD	1	3	BD	BD	BD	BD	BD
710	86–07–23	BD	BD	BD	BD	1	BD	BD	BD	BD	BD	BD
	86–09–17	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
711	86–09–17	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
712	86–07–23	BD	BD	BD	BD	3	BD	BD	BD	BD	BD	BD
713	86–07–23	BD	BD	30	BD	3	BD	BD	BD	BD	BD	BD
	86–09–17	BD	BD	BD	BD	1	BD	BD	BD	BD	BD	BD
	87–07–21	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
	88–07–19	7	BD	BD	BD	BD	BD	BD	2	BD	BD	BD
714	86–07–24	BD	BD	BD	BD	1	BD	BD	BD	BD	BD	BD
	88–07–19	3	BD	BD	BD	BD	BD	2	1	BD	BD	BD
715	86–07–24	BD	BD	BD	BD	1	BD	BD	BD	BD	BD	BD
	86–09–18	BD	BD	BD	BD	2	BD	BD	BD	BD	BD	BD
	87–07–21	5	BD	BD	BD	BD	BD	7	1	1	BD	BD
	88–07–19	5	BD	BD	BD	BD	BD	1	BD	BD	BD	BD
716	86–07–23	BD	BD	BD	BD	1	BD	BD	BD	BD	BD	BD

Table 17: cont.

Station Number	Date of Collection	1,2,3– TCB ng/g dry	1,2,4– TCB ng/g dry	1,3,5– TCB ng/g dry	2,3,4– TCP ng/g dry	2,4,5– TCP ng/g dry	2,4,6– TCP ng/g dry	2,3,6– TCT ng/g dry	2,4,5– TCT ng/g dry	2,6,A– TCT ng/g dry
708	86–07–22	BD	BD	BD	BD	BD	BD	BD	BD	BD
	87–07–21	BD	BD	BD	BD	BD	BD	BD	BD	BD
	88–07–19	BD	6	8	BD	BD	BD	13	4	3
709	88–07–22	BD	BD	BD	BD	BD	BD	BD	BD	BD
	86–09–17	BD	BD	BD	BD	BD	BD	BD	BD	BD
710	86–07–23	BD	BD	BD	BD	BD	BD	BD	BD	BD
	86–09–17	BD	BD	BD	BD	BD	BD	BD	BD	BD
711	86–09–17	BD	BD	BD	BD	BD	BD	BD	BD	BD
712	86–07–23	BD	BD	BD	BD	BD	BD	BD	BD	BD
713	86–07–23	BD	BD	BD	BD	BD	BD	BD	BD	BD
	86–09–17	BD	BD	BD	BD	BD	BD	BD	BD	BD
	87–07–21	BD	BD	BD	BD	BD	BD	BD	BD	BD
	88–07–19	BD	6	18	BD	BD	BD	3	6	6
714	86–07–24	BD	BD	BD	BD	BD	BD	BD	BD	BD
	88–07–19	BD	4	BD	BD	BD	BD	BD	4	2
715	86–07–24	BD	BD	BD	BD	BD	BD	BD	BD	BD
	86–09–18	BD	BD	BD	BD	BD	BD	BD	BD	BD
	87–07–21	BD	BD	3	BD	BD	BD	BD	BD	BD
	88–07–19	BD	6	7	BD	BD	BD	6	14	4
716	86–07–23	BD	BD	BD	BD	BD	BD	BD	BD	BD

Table 18: *Cladophora* Collection Data for Collingwood Harbour

Station Number	Date of Collectin	Aldrin ng/g dry	Alpha Chlordane ng/g dry	Gamma Chlordane ng/g dry	Dieldrin ng/g dry	DMDT ng/g dry	Endosulfan S ng/g dry	Endosulfan I ng/g dry	Endosulfan II ng/g dry	Endrin ng/g dry	HEPT ng/g dry	HEPE ng/g dry
801	86-06-18	BD	BD	BD	45	BD	9	BD	BD	BD	BD	BD
802	86-06-18	BD	BD	BD	13	BD	BD	BD	BD	BD	BD	BD
803	86-06-18	BD	BD	BD	35	BD	43	BD	BD	BD	BD	BD
804	86-06-18	BD	BD	BD	25	33	52	BD	5	BD	BD	13
805	86-06-18	BD	BD	BD	27	BD	17	BD	27	19	BD	BD
806	86-06-18	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
807	86-06-18	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
808	86-06-18	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
809	86-06-18	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
810	86-06-18	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
811	86-06-18	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD

Station Number	Date of Collection	HCB ng/g dry	HCBD ng/g dry	Alpha BHC ng/g dry	Beta BHC ng/g dry	Gamma BHC ng/g dry	HCE ng/g dry	Total Ignition % dry wt	Mirex ng/g dry	OCS ng/g dry	OP-DDT ng/g dry	Oxychldane ng/g dry
801	86-06-18	BD	BD	BD	BD	BD	BD	79	BD	BD	BD	24
802	86-06-18	1	BD	BD	BD	BD	BD	79	BD	BD	BD	26
803	86-06-18	1	BD	BD	BD	BD	1	74	BD	BD	BD	33
804	86-06-18	BD	BD	0	BD	1	BD	85	BD	BD	BD	27
805	86-06-18	BD	BD	2	BD	BD	BD	82	BD	BD	BD	25
806	86-06-18	BD	BD	0	BD	BD	BD	73	BD	BD	BD	BD
807	86-06-18	BD	BD	1	BD	BD	1	84	BD	BD	BD	BD
808	86-06-18	BD	BD	0	BD	BD	BD	75	BD	BD	BD	BD
809	86-06-18	BD	BD	1	BD	BD	BD	74	BD	BD	BD	BD
810	86-06-18	BD	BD	BD	BD	BD	BD	78	BD	BD	BD	BD
811	86-06-18	BD	BD	BD	BD	BD	BD	78	BD	BD	BD	BD

Table 18: cont.

Station Number	Date of Collection	PNCB ng/g dry	PCPH ng/g dry	Total PCB ng/g dry	PP–DDD ng/g dry	PP–DDE ng/g dry	PP–DDT ng/g dry	1,2,3,4–TCB ng/g dry	1,2,3,5–TCB ng/g dry	1,2,4,5–TCB ng/g dry	2,3,4,5–TCP ng/g dry	2,3,5,6–TCP ng/g dry
801	86–06–18	BD	30	BD	BD	BD	BD	BD	BD	BD	BD	BD
802	86–06–18	BD	BD	155	BD	BD	BD	BD	BD	BD	BD	BD
803	86–06–18	BD	BD	BD	BD	0	BD	BD	BD	BD	BD	BD
804	86–06–18	BD	BD	BD	BD	2	BD	BD	BD	BD	BD	BD
805	86–06–18	BD	40	30	BD	2	BD	BD	BD	BD	BD	BD
806	86–06–18	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
807	86–06–18	BD	BD	BD	BD	2	BD	BD	BD	BD	BD	BD
808	86–06–18	BD	BD	BD	BD	2	BD	BD	BD	BD	BD	BD
809	86–06–18	BD	20	BD	BD	3	BD	BD	BD	BD	BD	BD
810	86–06–18	BD	20	BD	BD	3	BD	BD	BD	BD	BD	BD
811	86–06–18	BD	BD	BD	BD	1	BD	BD	BD	BD	BD	BD

Station Number	Date of Collection	1,2,3–TCB ng/g dry	1,2,4–TCB ng/g dry	1,3,5–TCB ng/g dry	2,3,4–TCP ng/g dry	2,4,5–TCP ng/g dry	2,4,6–TCP ng/g dry	2,3,6–TCT ng/g dry	2,4,5–TCT ng/g dry	2,6,A–TCT ng/g dry
801	86–06–18	BD	BD	BD	BD	BD	BD	BD	BD	BD
802	86–06–18	BD	BD	BD	BD	BD	BD	BD	BD	BD
803	86–06–18	BD	BD	BD	BD	BD	BD	BD	BD	BD
804	86–06–18	BD	BD	BD	BD	BD	BD	BD	BD	BD
805	86–06–18	BD	BD	BD	BD	BD	BD	BD	BD	BD
806	86–06–18	BD	BD	BD	BD	BD	BD	BD	BD	BD
807	86–06–18	BD	BD	BD	BD	BD	BD	BD	BD	BD
808	86–06–18	BD	BD	BD	BD	BD	BD	BD	BD	BD
809	86–06–18	BD	BD	BD	BD	BD	BD	BD	BD	BD
810	86–06–18	BD	BD	BD	BD	BD	BD	BD	BD	BD
811	86–06–18	BD	BD	BD	BD	BD	BD	BD	BD	BD

Table 19: *Cladophora* Collection Data for the Grand River

Station Number	Date of Collection	Aldrin ng/g dry	Alpha Chlordane ng/g dry	Gamma Chlordane ng/g dry	Dicamba ng/g dry	2,4−D ng/g dry	2,4−DB ng/g dry	2,4−DP ng/g dry	Dieldrin ng/g dry	DMDT ng/g dry	Endosulfan S ng/g dry	Endosulfan I ng/g dry
901	86−06−11	BD	BD	BD	BD	BD	173	BD	BD	BD	BD	4
	86−06−16	BD	BD	BD	BD	1000	BD	BD	BD	BD	BD	BD
902	87−05−12	BD	BD	1					47	127	BD	BD
903	86−06−16	BD	BD	BD	BD	130	BD	BD	BD	BD	BD	BD
904	86−06−11	BD	BD	BD	BD	BD	597	BD	BD	BD	BD	10
905	86−06−11	BD	BD	BD	BD	77	553	BD	BD	BD	BD	BD
906	86−06−16	BD	BD	BD	BD	BD	BD	63	8	BD	BD	BD
907	86−06−16	BD	1	BD	BD	900	500	37	53	BD	BD	BD
908	86−06−16	BD	BD	BD	BD	BD	193	BD	BD	BD	BD	BD

Station Number	Date of Collection	Endosulfan II ng/g dry	Endrin ng/g dry	HEPT ng/g dry	HEPE ng/g dry	HCB ng/g dry	HCBD ng/g dry	Alpha BHC ng/g dry	Beta BHC ng/g dry	Gamma BHC ng/g dry	HCE ng/g dry	Total Ignition % dry wt
901	86−06−11	2	BD	BD	BD	BD	BD	1	BD	1	BD	61
	86−06−16	BD	BD	BD	BD	BD	BD	2	BD	1	BD	67
902	87−05−12	BD	BD	BD	BD	BD	BD	3	BD	0	BD	52
903	86−06−16	BD	BD	BD	BD	BD	BD	1	BD	1	BD	72
904	86−06−11	BD	BD	BD	BD	BD	BD	1	BD	BD	BD	30
905	86−06−11	BD	BD	BD	BD	BD	BD	2	BD	1	BD	66
906	86−06−16	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	78
907	86−06−16	BD	BD	BD	BD	BD	BD	1	BD	BD	BD	77
908	86−06−16	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	58

Table 19: cont.

Station Number	Date of Collection	Mirex ng/g dry	OCS ng/g dry	OP–DDT ng/g dry	Oxychlordane ng/g dry	PNCB ng/g dry	PCPH ng/g dry	Picloram ng/g dry	Total PCB ng/g dry	PP–DDD ng/g dry	PP–DDE ng/g dry	PP–DDT ng/g dry
901	86–06–11	BD	BD	BD	BD	BD	BD	BD	42	BD	1	BD
	86–06–16	BD	BD	BD	BD	BD	BD	BD	23	BD	2	BD
902	87–05–12	BD	BD	BD	BD	BD	BD		BD	BD	BD	BD
903	86–06–16	BD	BD	BD	BD	BD	BD	BD	12	BD	4	BD
904	86–06–11	BD	BD	BD	BD	BD	BD	BD	23	BD	0	BD
905	86–06–11	BD	BD	BD	BD	BD	BD	BD	27	BD	2	BD
906	86–06–16	BD	BD	BD	BD	BD	BD	BD	BD	BD	2	BD
907	86–06–16	BD	BD	BD	BD	BD	BD	BD	188	BD	4	BD
908	86–06–16	BD	BD	BD	BD	BD	BD	BD	BD	BD	1	BD

Station Number	Date of Collection	Silvex ng/g dry	1,2,3,4–TCB ng/g dry	1,2,3,5–TCB ng/g dry	1,2,4,5–TCB ng/g dry	2,3,4,5–TCP ng/g dry	2,3,5,6–TCP ng/g dry	1,2,3–TCB ng/g dry	1,2,4–TCB ng/g dry	1,3,5–TCB ng/g dry	2,3,4–TCP ng/g dry	2,4,5–TCP ng/g dry
901	86–06–11	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
	86–06–16	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
902	87–05–12		BD	BD	BD	BD	BD	BD	BD	9	BD	BD
903	86–06–16	50	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
904	86–06–11	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
905	86–06–11	20	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
906	86–06–16	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
907	86–06–16	23	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD
908	86–06–16	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD

Table 19: cont.

Station Number	Date of Collection	2,4,6– TCP ng/g dry	2,4,5– TCPA ng/g dry	2,3,6– TCT ng/g dry	2,4,5– TCT ng/g dry	2,6,A– TCT ng/g dry
901	86–06–11	BD	27	BD	BD	BD
	86–06–16	BD	253	BD	BD	BD
902	87–05–12	BD		BD	BD	BD
903	86–06–16	BD	30	BD	BD	BD
904	86–06–11	BD	BD	BD	BD	BD
905	86–06–11	BD	63	BD	BD	BD
906	86–06–16	BD	BD	BD	BD	BD
907	86–06–16	BD	BD	BD	BD	BD
908	86–06–16	BD	BD	BD	BD	BD

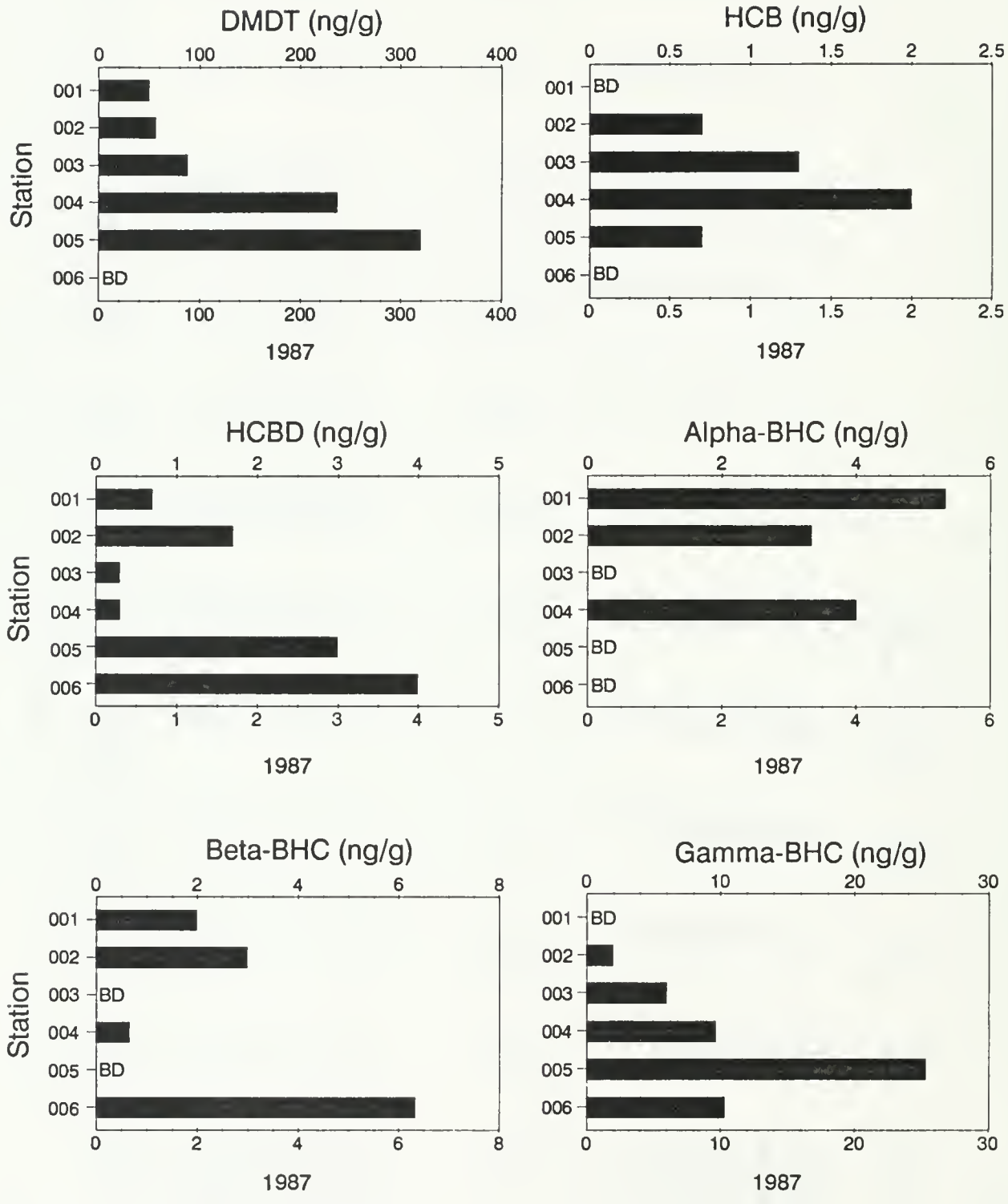

Figure Can.1: Concentrations in ng/g Dry Weight of DMDT, HCB, HCBD, Alpha-BHC, Beta-BHC and Gamma-BHC, in *Cladophora* collected from Canagagigue Creek.

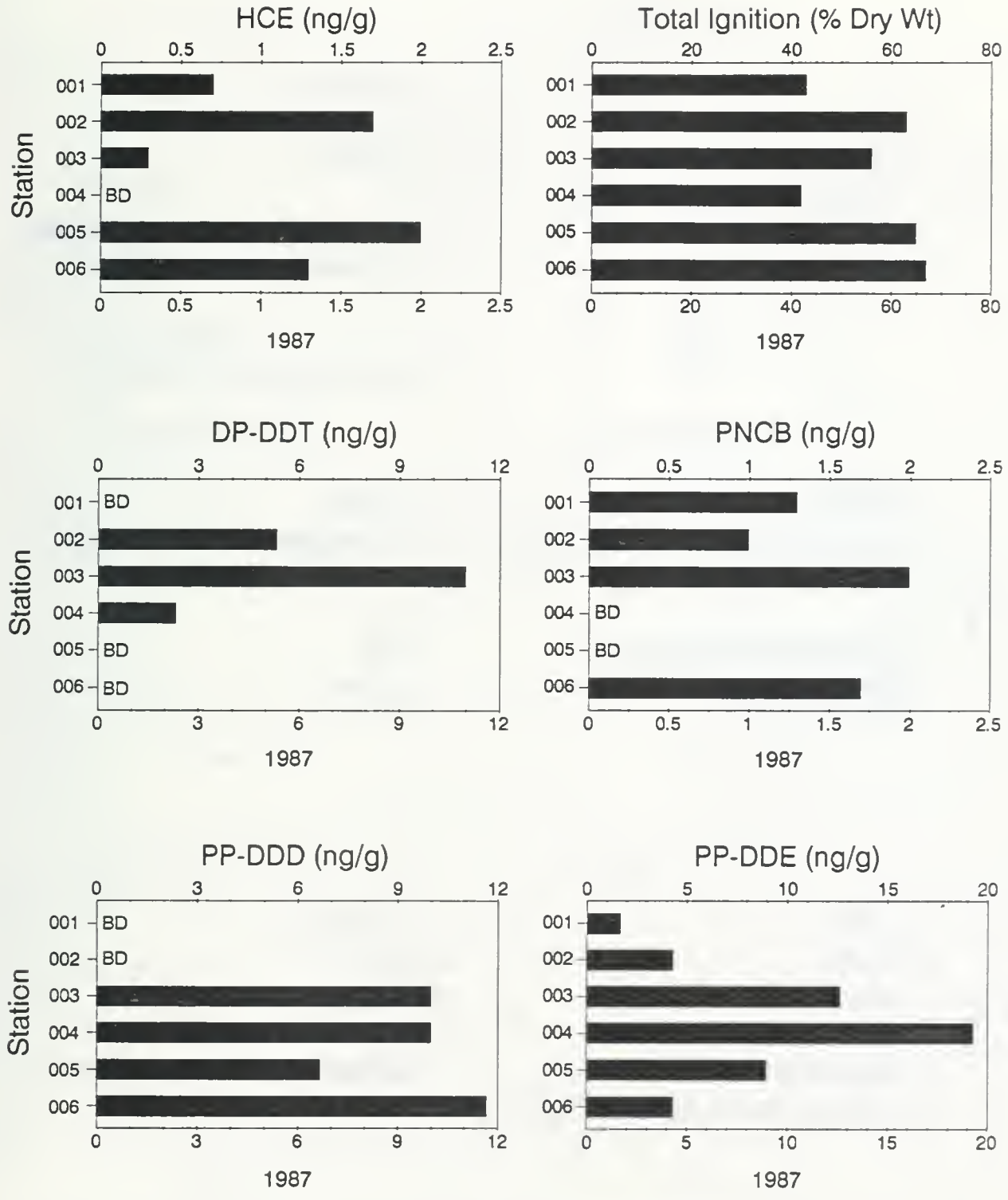

Figure Can.2: Concentrations in ng/g Dry Weight (except where noted) of HCE, Total Ignition (% Dry Wt), DP-DDT, PNCB, PP-DDD and PP-DDE, in *Cladophora* collected from Canagagigue Creek.

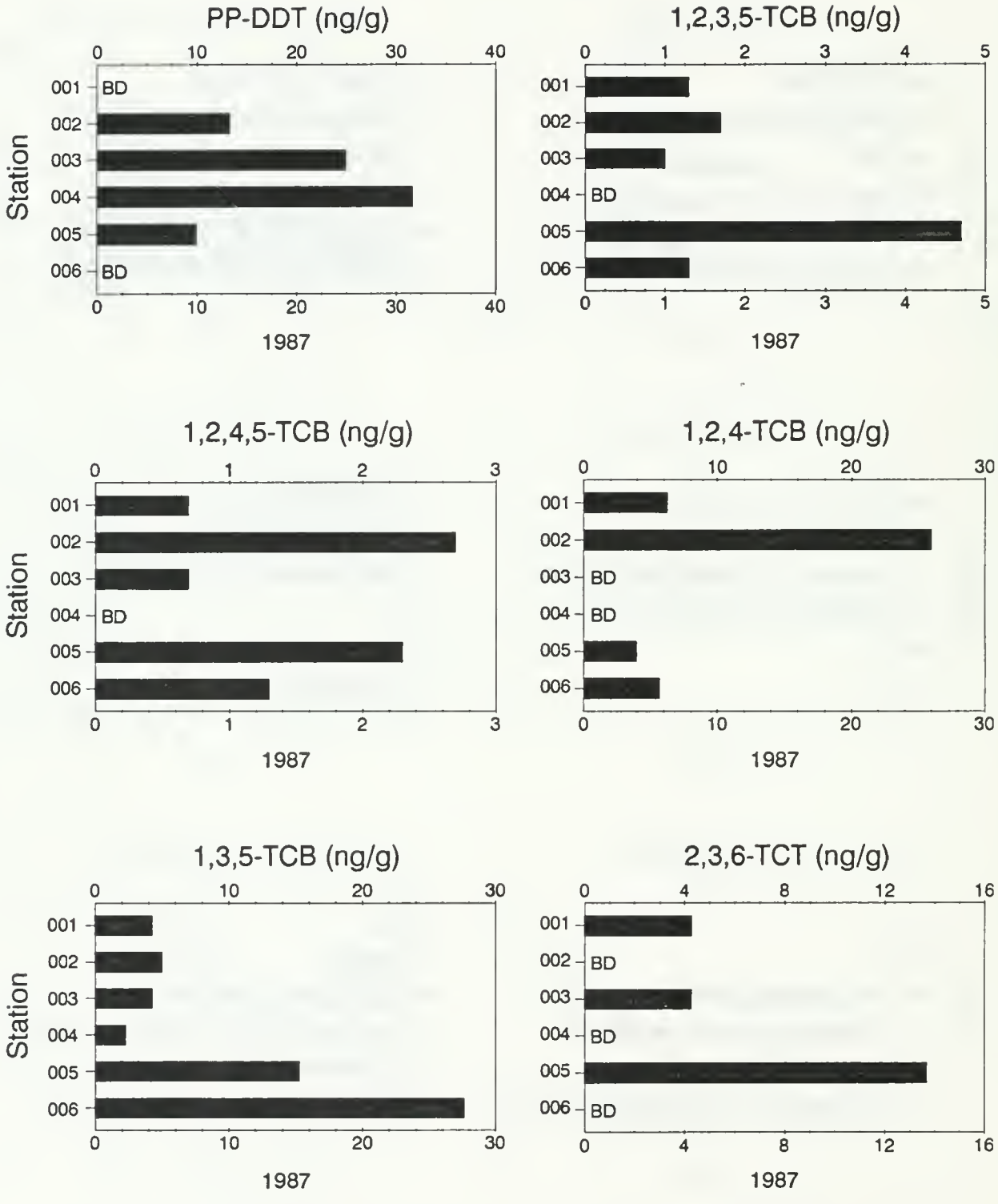

Figure Can.3: Concentrations in ng/g Dry Weight of PP-DDT, 1,2,3,5-TCB, 1,2,4,5-TCB, 1,2,4-TCB, 1,3,5-TCB and 2,3,6-TCT, in *Cladophora* collected from Canagagigue Creek.

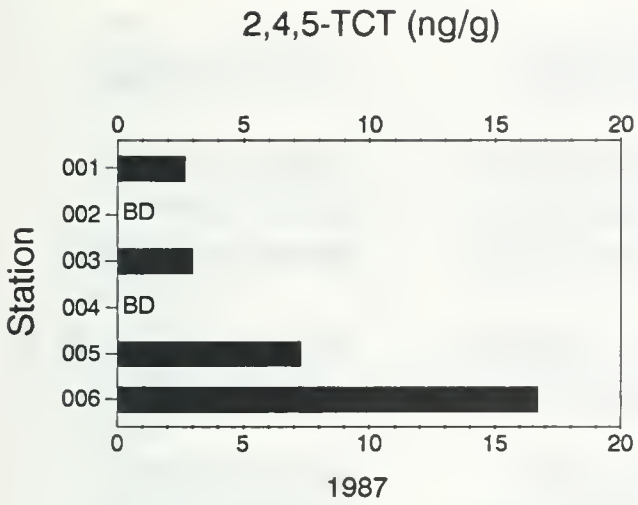

Figure Can.4: Concentrations in ng/g Dry Weight of 2,4,5-TCT, in *Cladophora* collected from Canagagigue Creek.

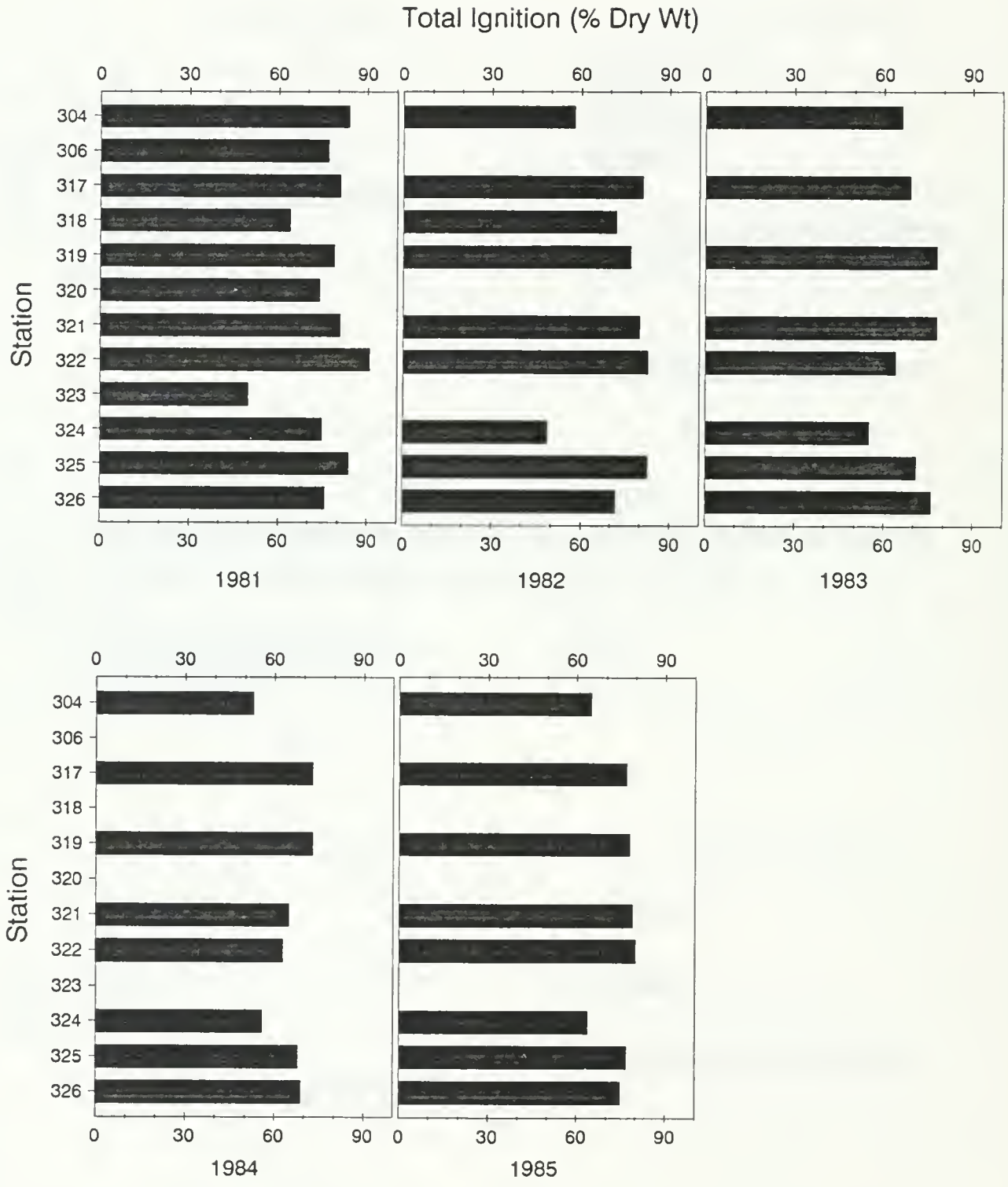

Figure Ont.1: Total Ignition (% Dry Wt) for *Cladophora* collected from Lake Ontario.

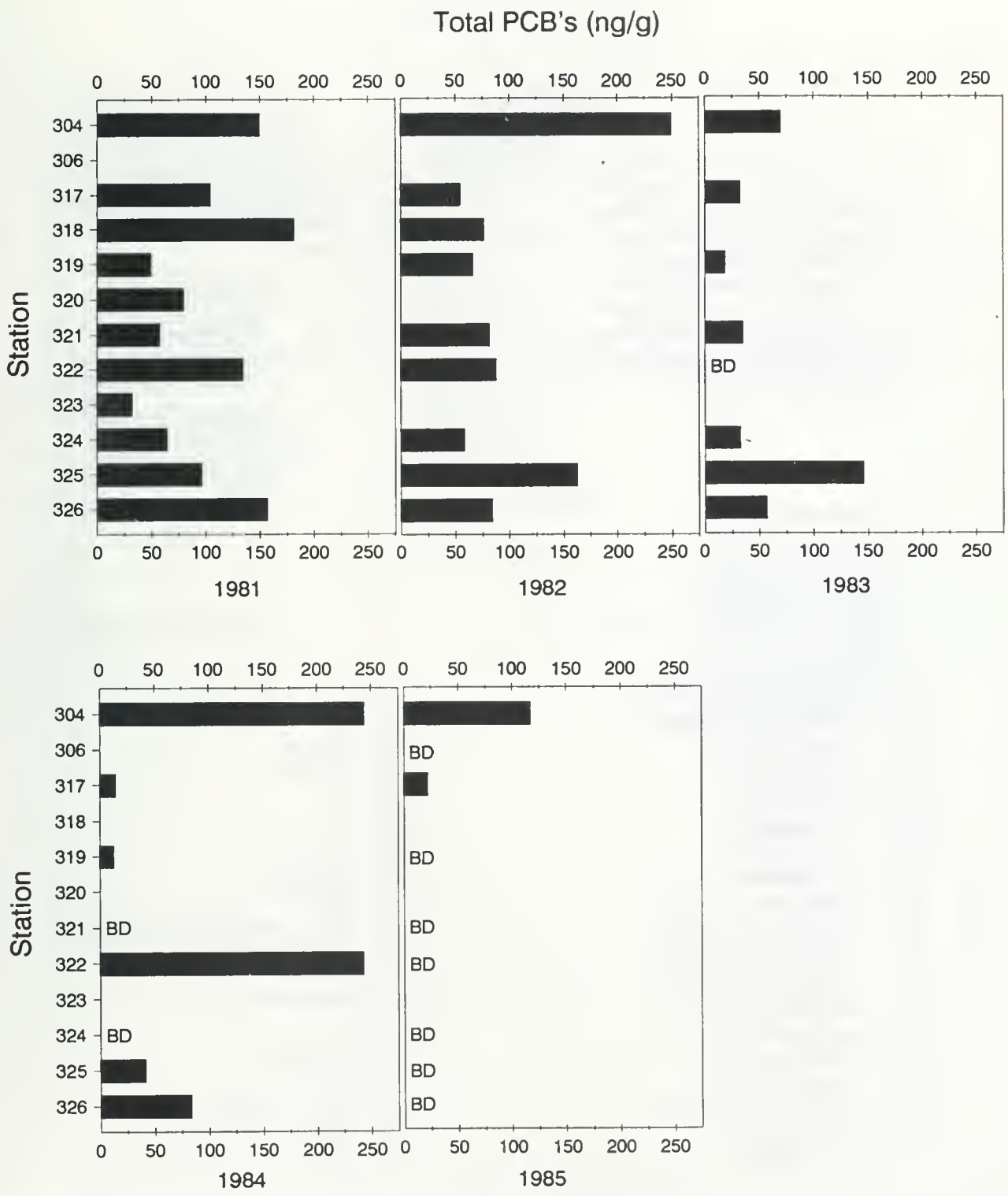

Figure Ont.2: Concentrations in ng/g Dry Weight for Total PCB's, in *Cladophora* collected from Lake Ontario.

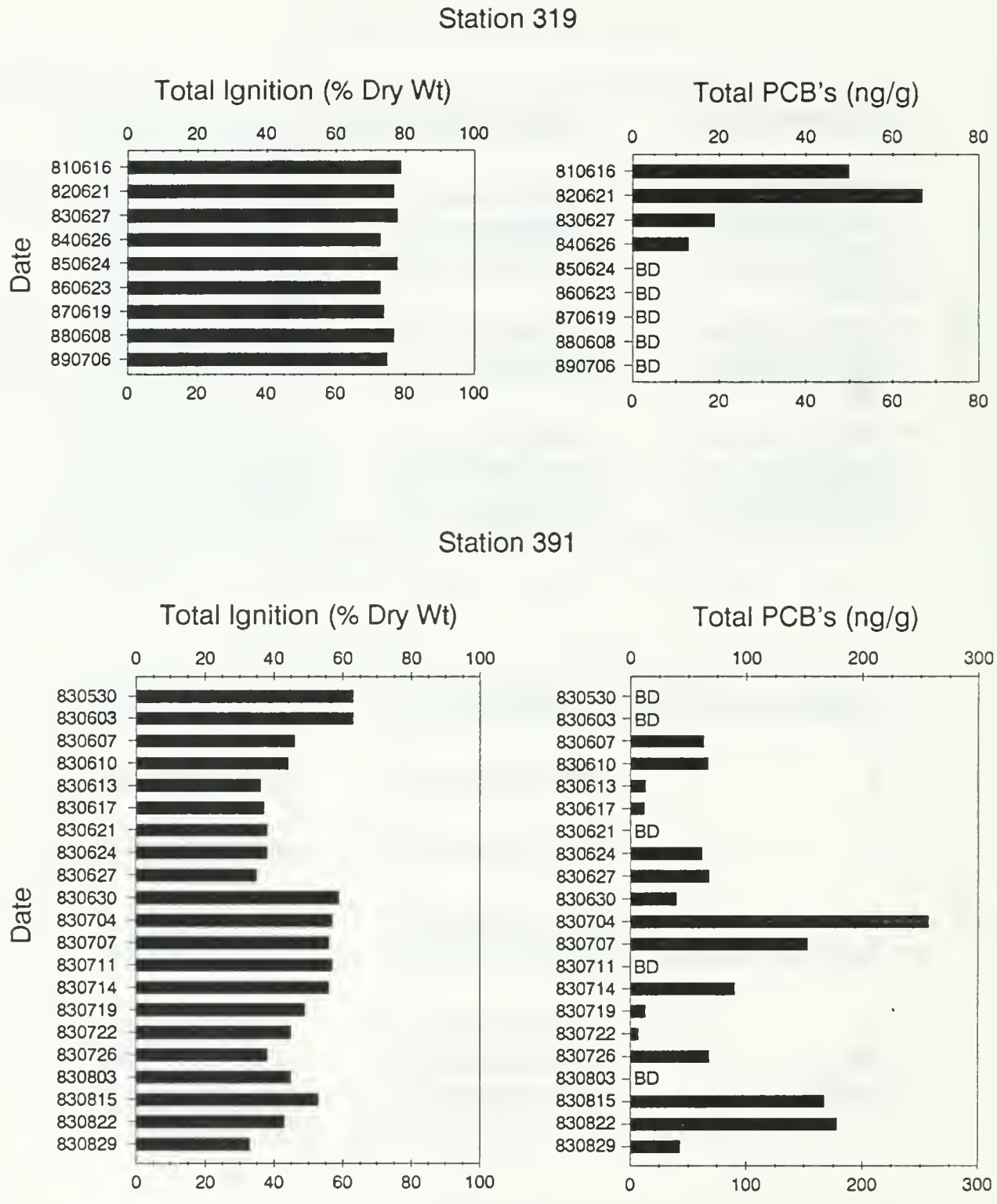

Figure Ont.3: Time Trends for Total PCB's (ng/g Dry Weight) and Total Ignition (% Dry Weight), in *Cladophora* collected from Lake Ontario.

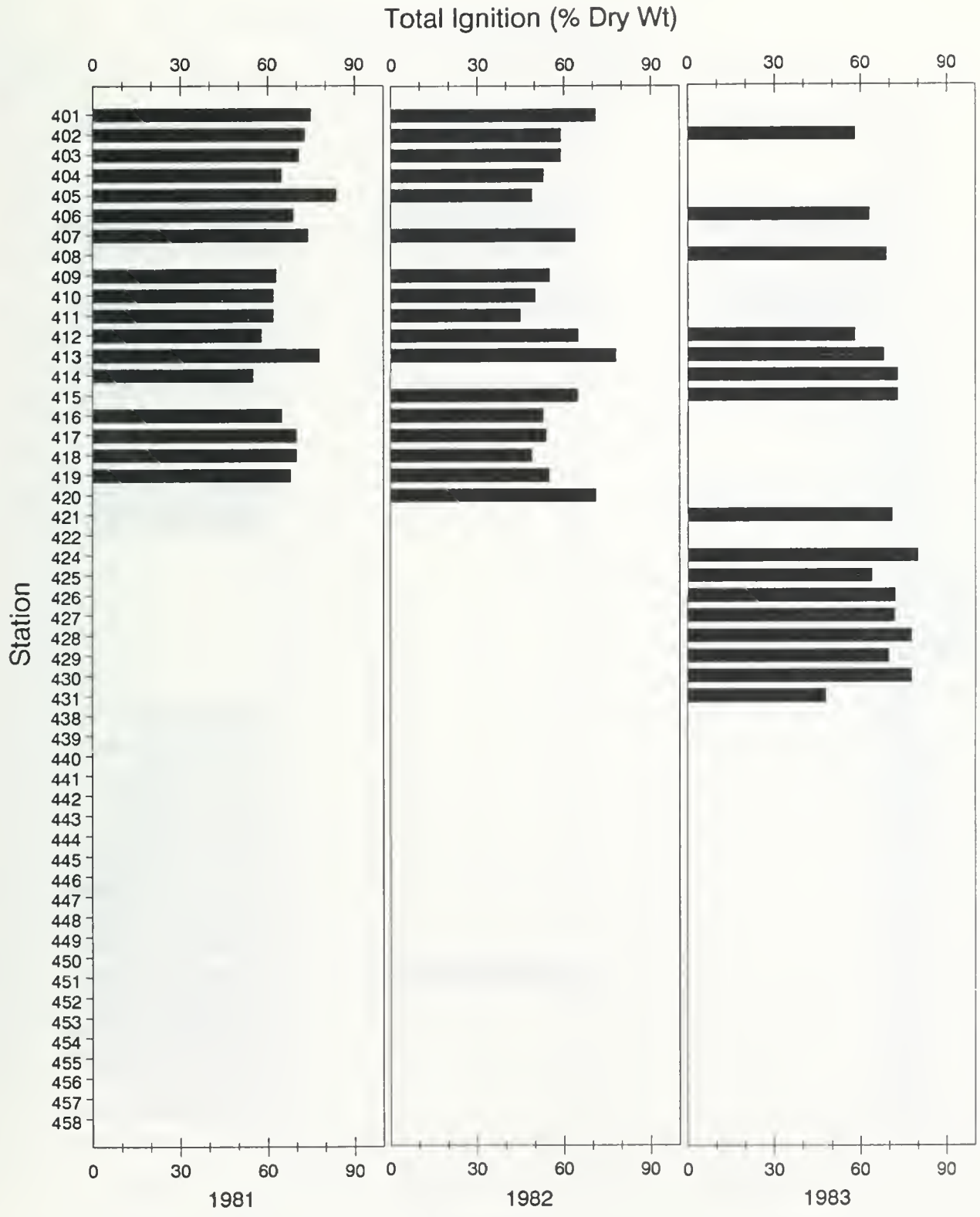

Figure Niag.1: Total Ignition (% Dry Weight) for *Cladophora* collected from the Niagara River.

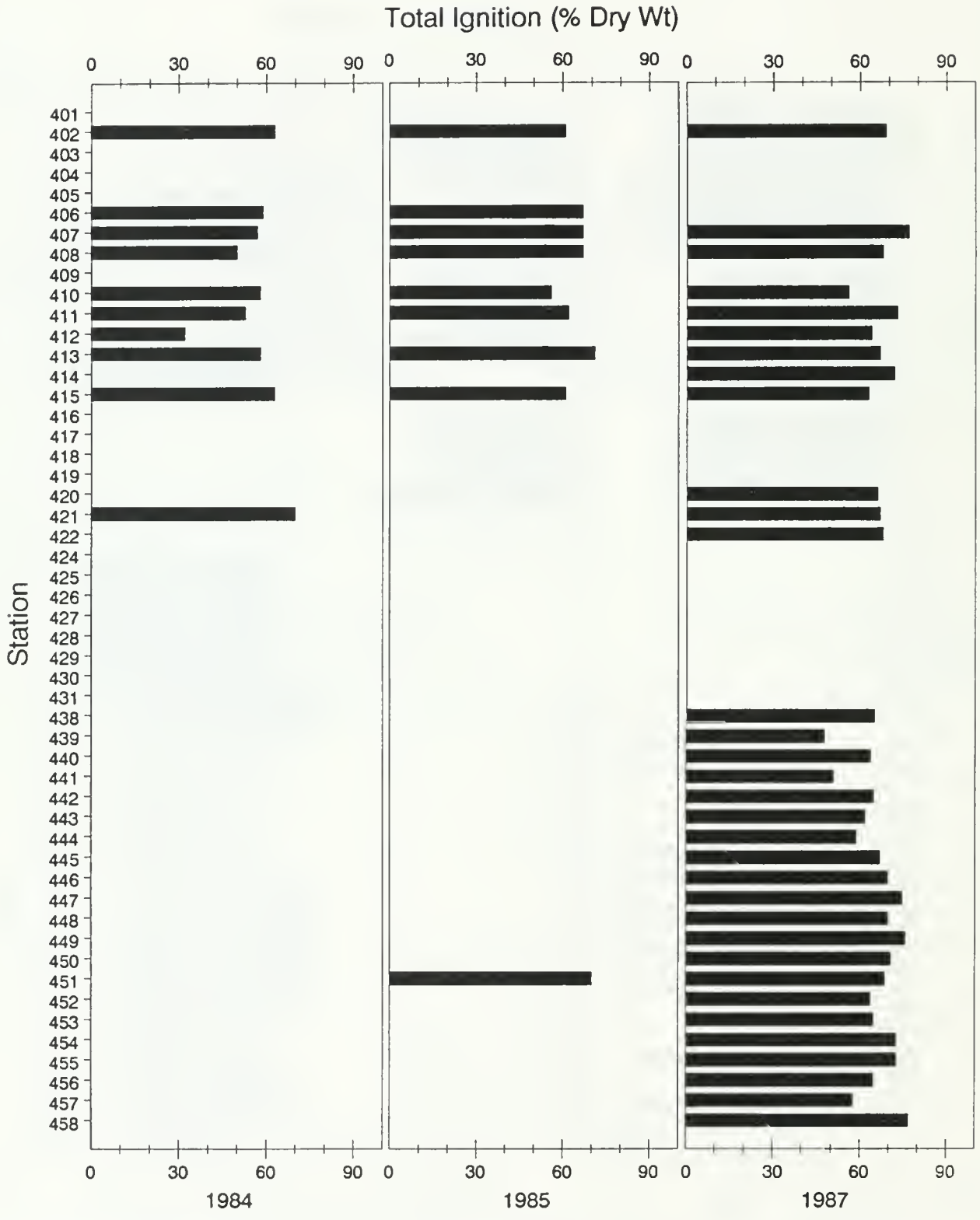

Figure Niag.2: Total Ignition (% Dry Weight) for *Cladophora* collected from the Niagara River.

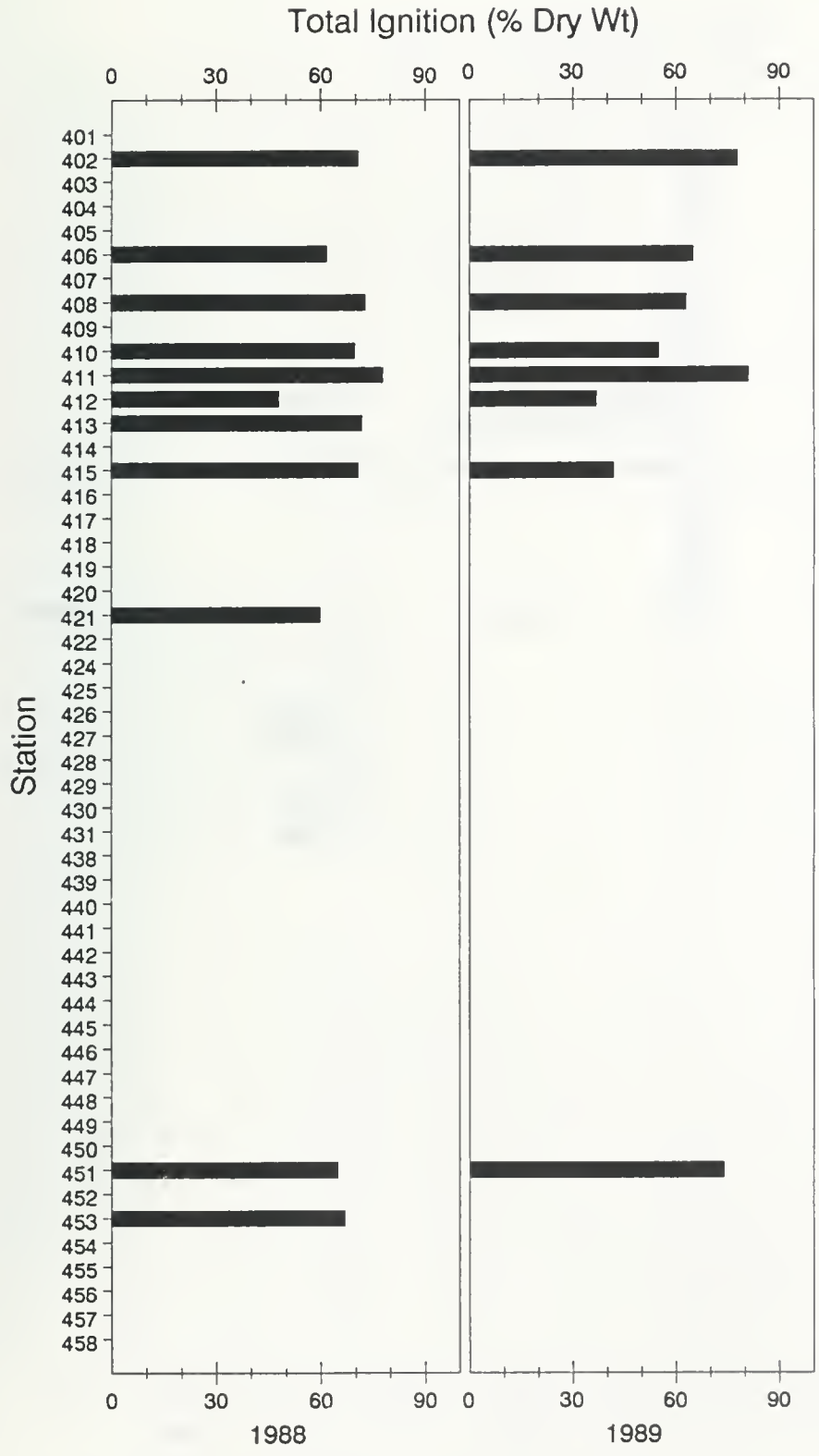

Figure Niag.3: Total Ignition (% Dry Weight) for *Cladophora* collected from the Niagara River.

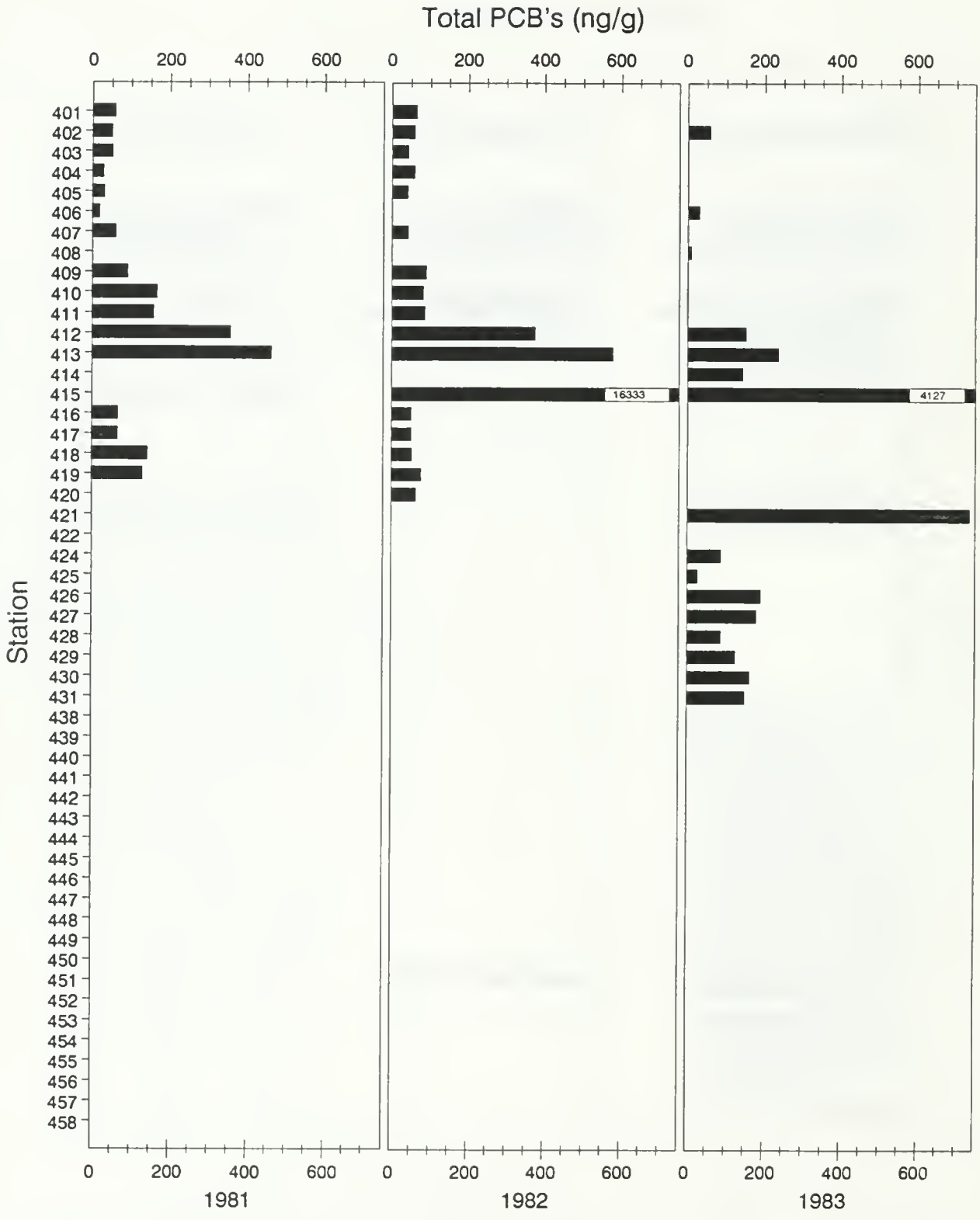

Figure Niag.4: Concentrations in ng/g Dry Weight of PCB's, in *Cladophora* collected from the Niagara River.

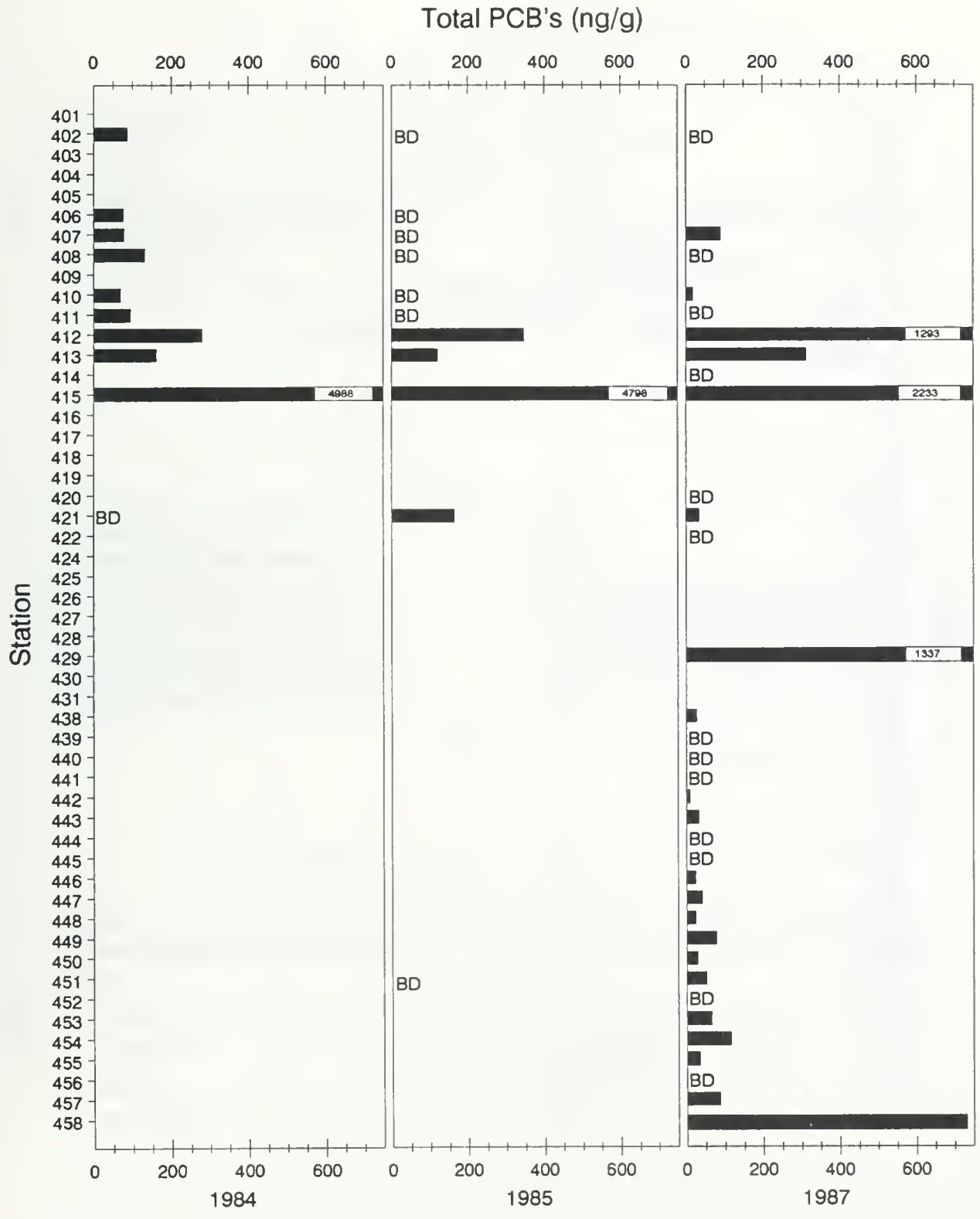

Figure Niag.5: Concentrations in ng/g Dry Weight of PCB's, in *Cladophora* collected from the Niagara River.

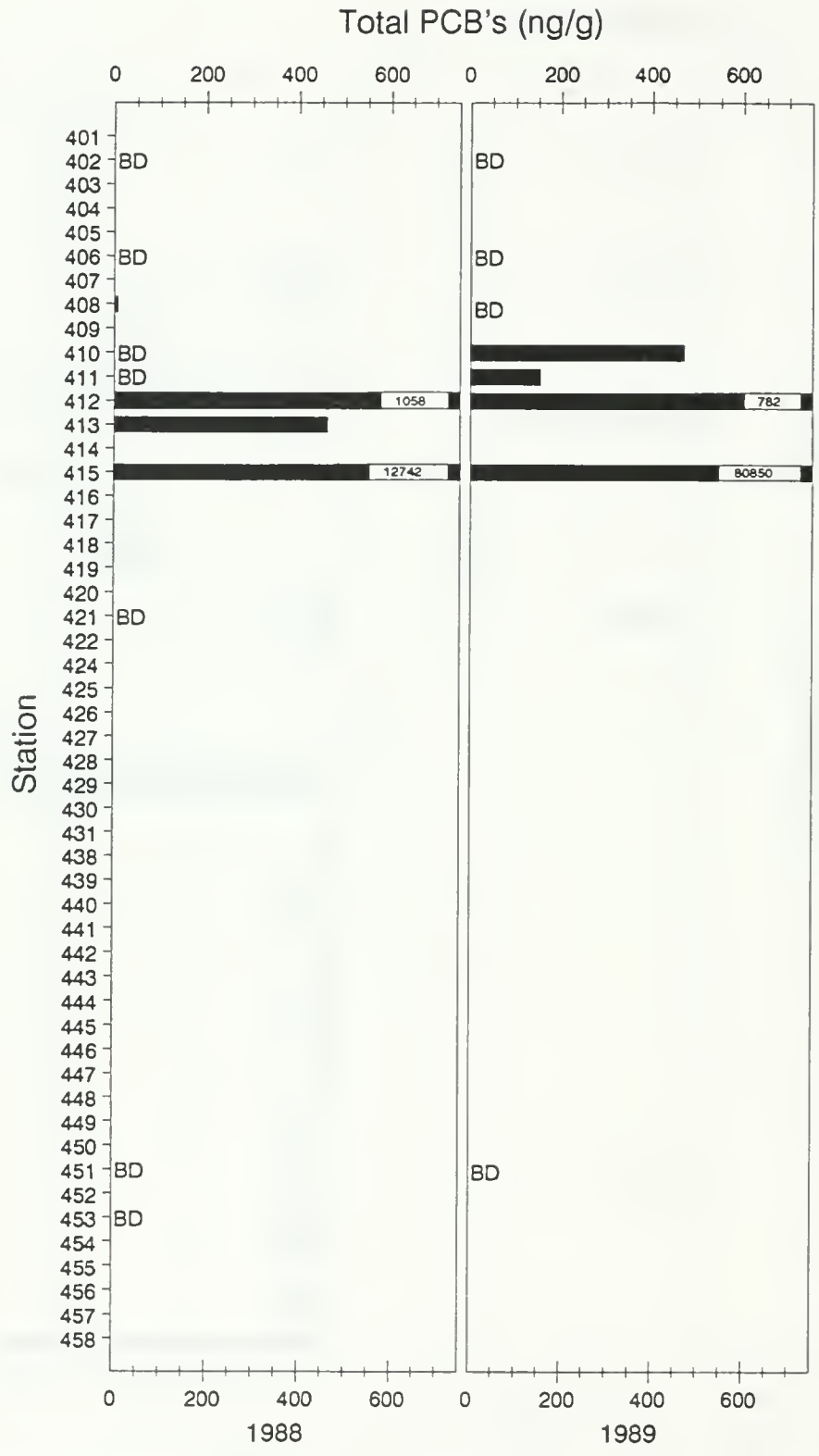

Figure Niag.6: Concentrations in ng/g Dry Weight of PCB's, in *Cladophora* collected from the Niagara River.

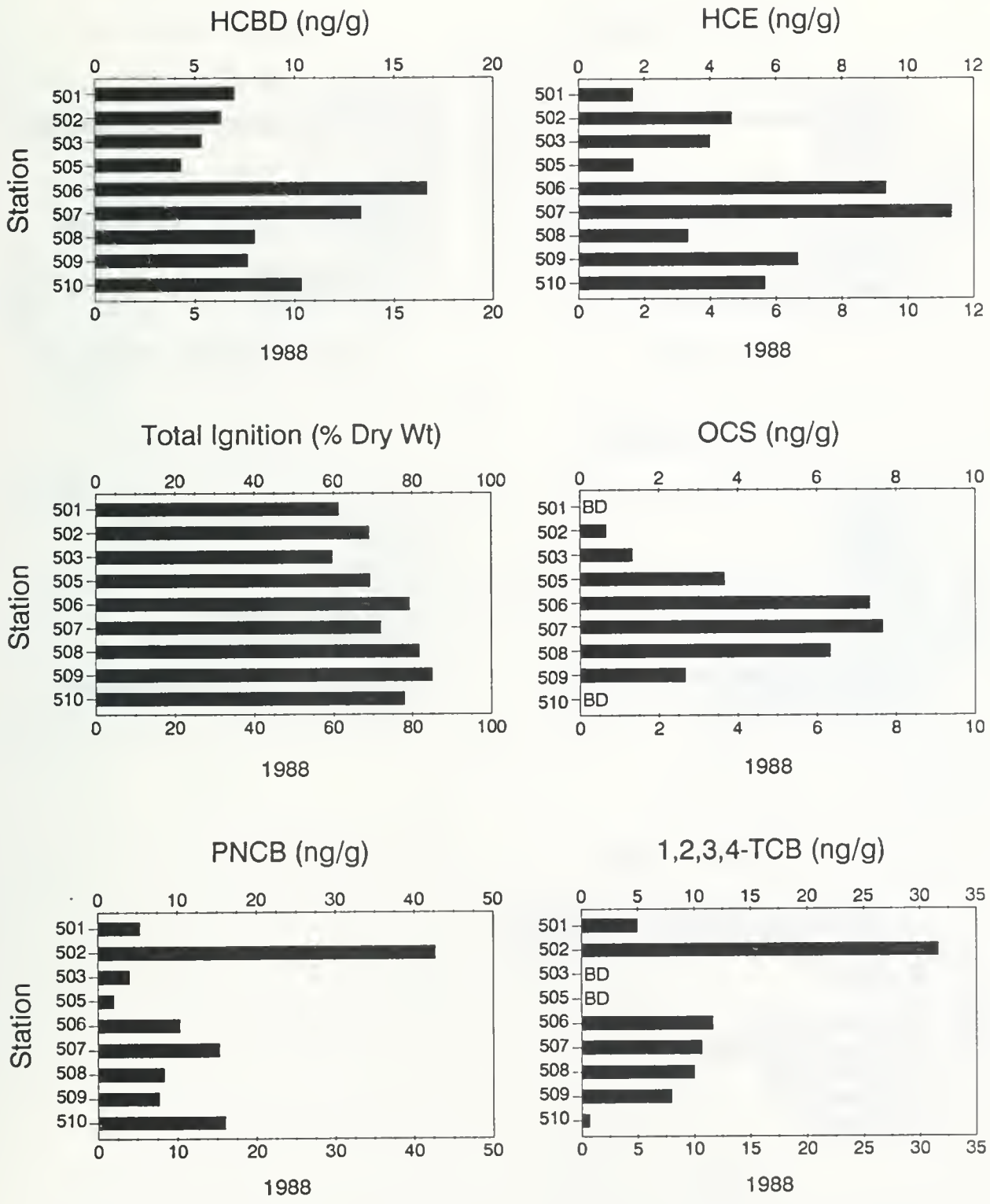

Figure Erie.1: Concentrations in ng/g Dry Weight (except where noted) of HCBD, HCE, Total Ignition (% Dry Wt), OCS, PNCB and 1,2,3,4-TCB, in *Cladophora* collected from Lake Erie.

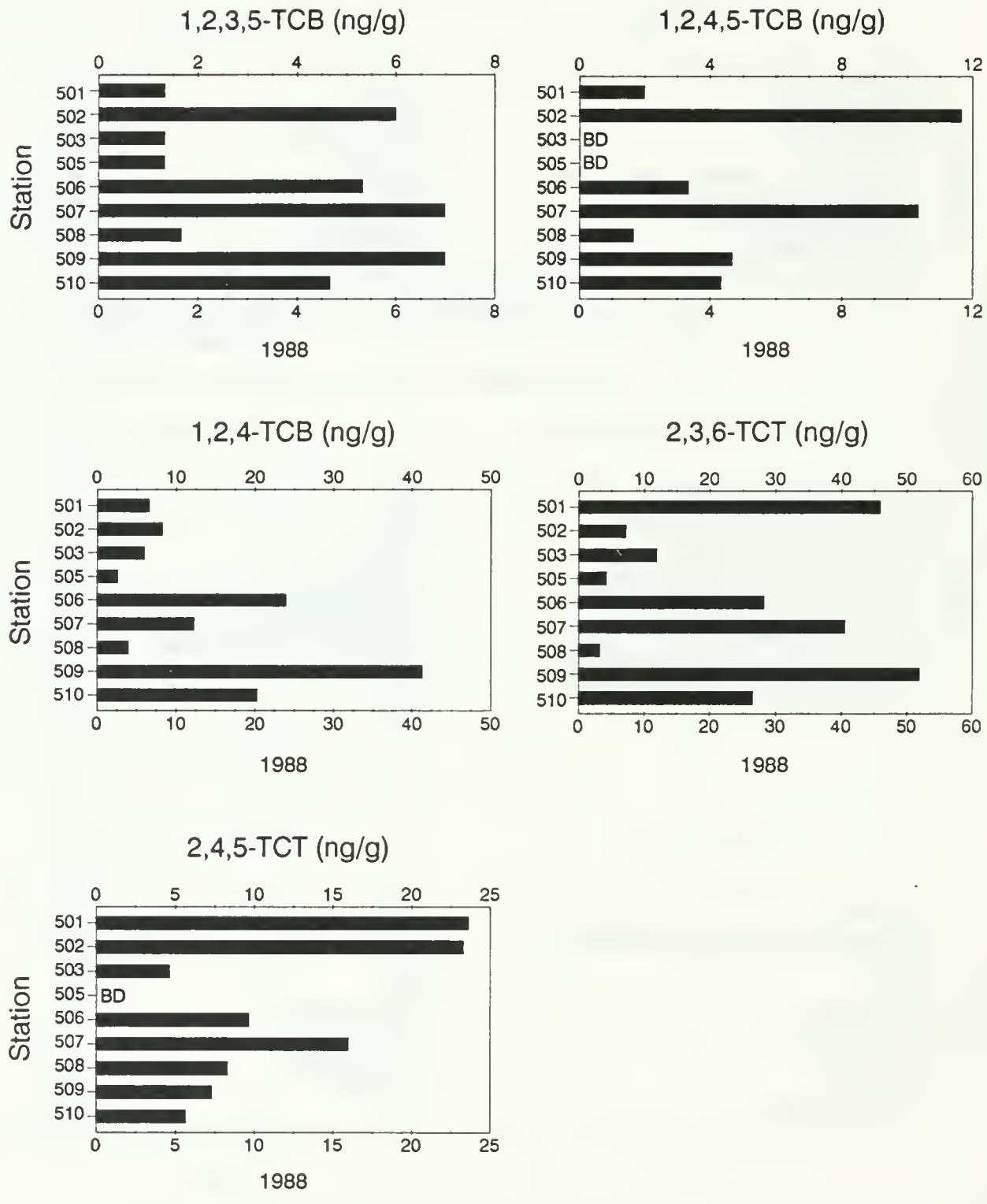

Figure Erie.2: Concentrations in ng/g Dry Weight (except where noted) of 1,2,3,5-TCB, 1,2,4,5-TCB, 1,2,4-TCB, 2,3,6-TCT and 2,4,5-TCT, in *Cladophora* collected from Lake Erie.

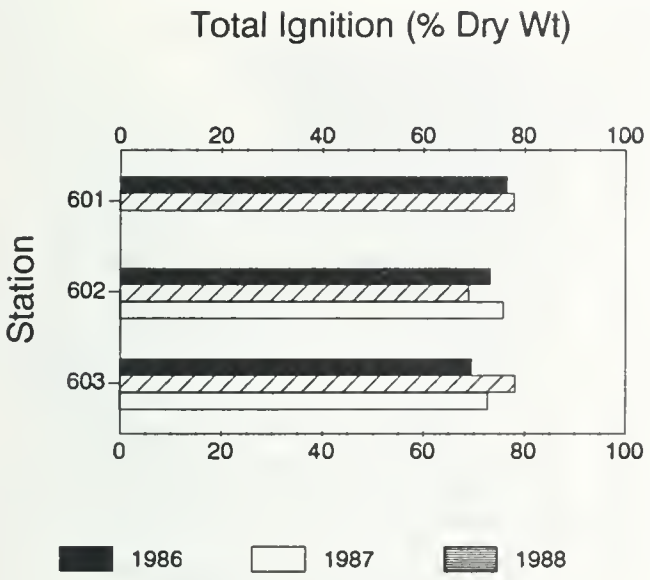

Figure Det.1: Total Ignition (% Dry Weight) for *Cladophora* collected from the Detroit River.

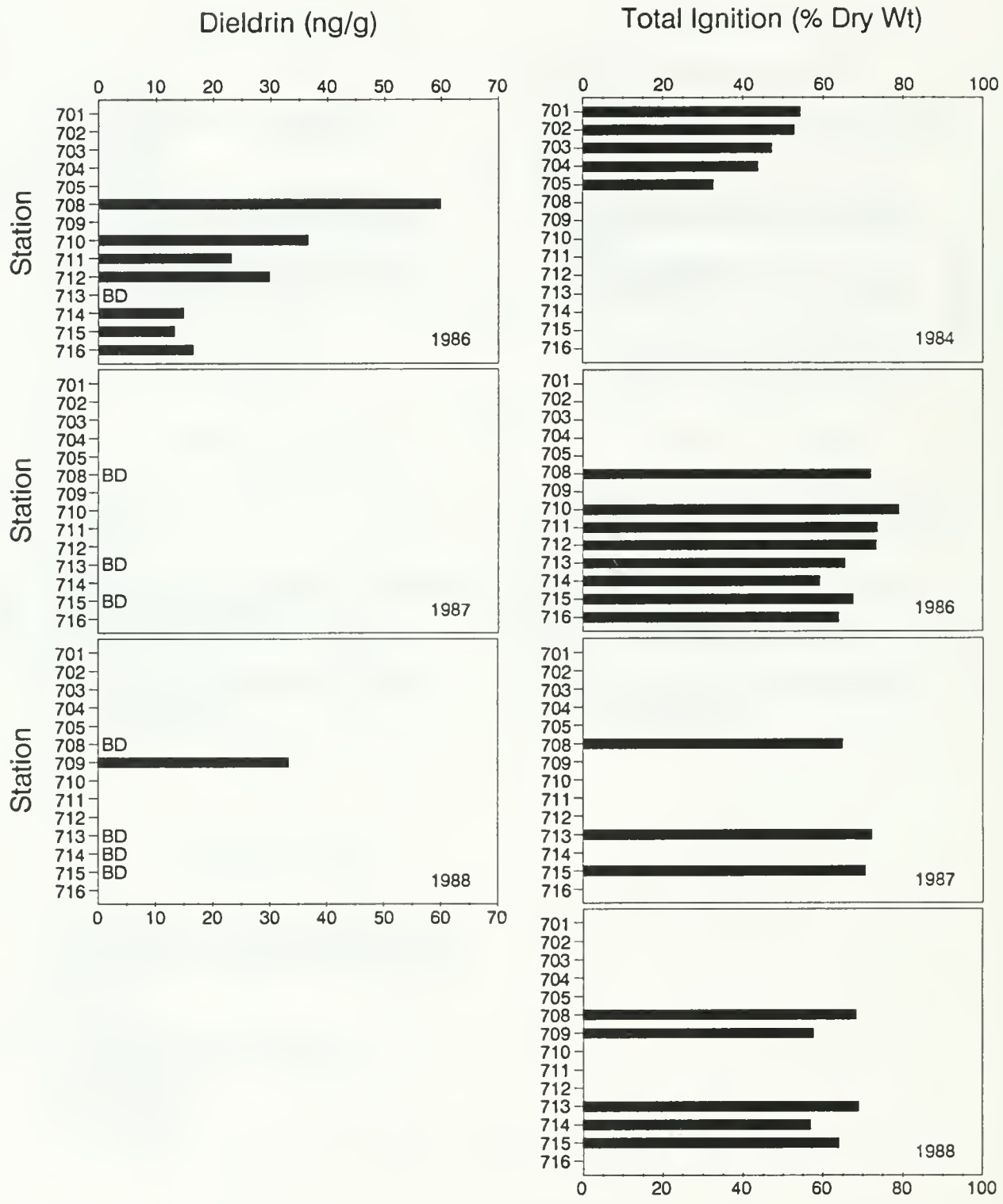

Figure Scr.1: Concentration of Dieldrin (ng/g Dry Weight) and Total Ignition (% Dry Weight), in *Cladophora* collected from the St. Clair River.

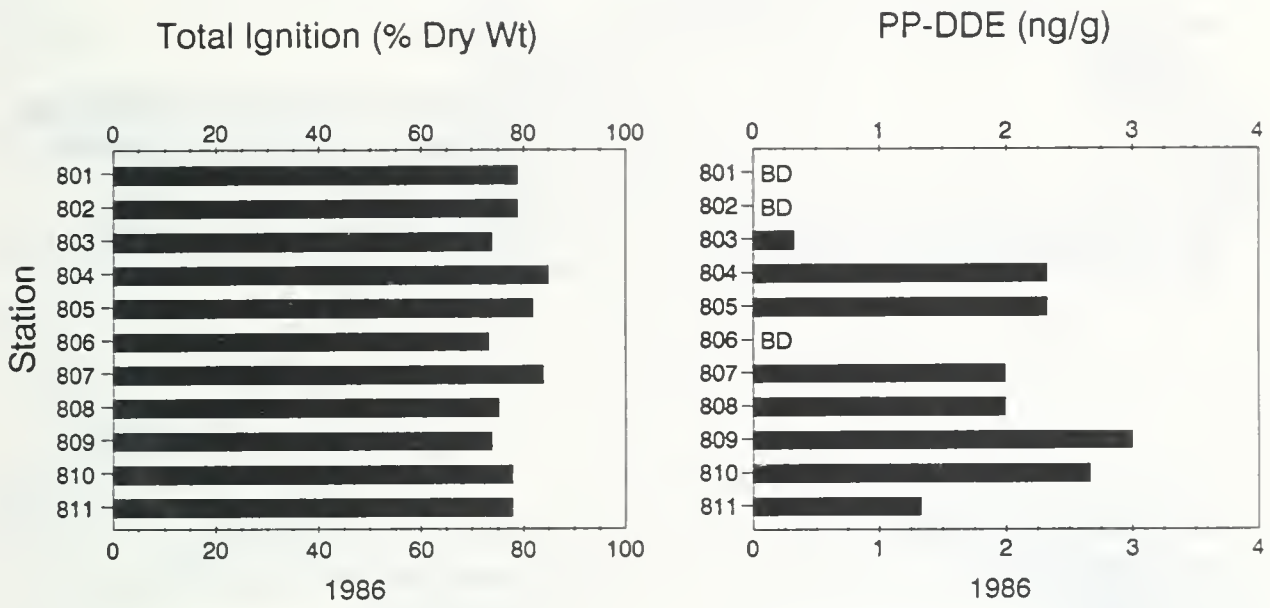

Figure Col.1: Concentration of Total Ignition (% Dry Weight) and PP-DDE (ng/g Dry Weight), in *Cladophora* collected from Collingwood Harbour.

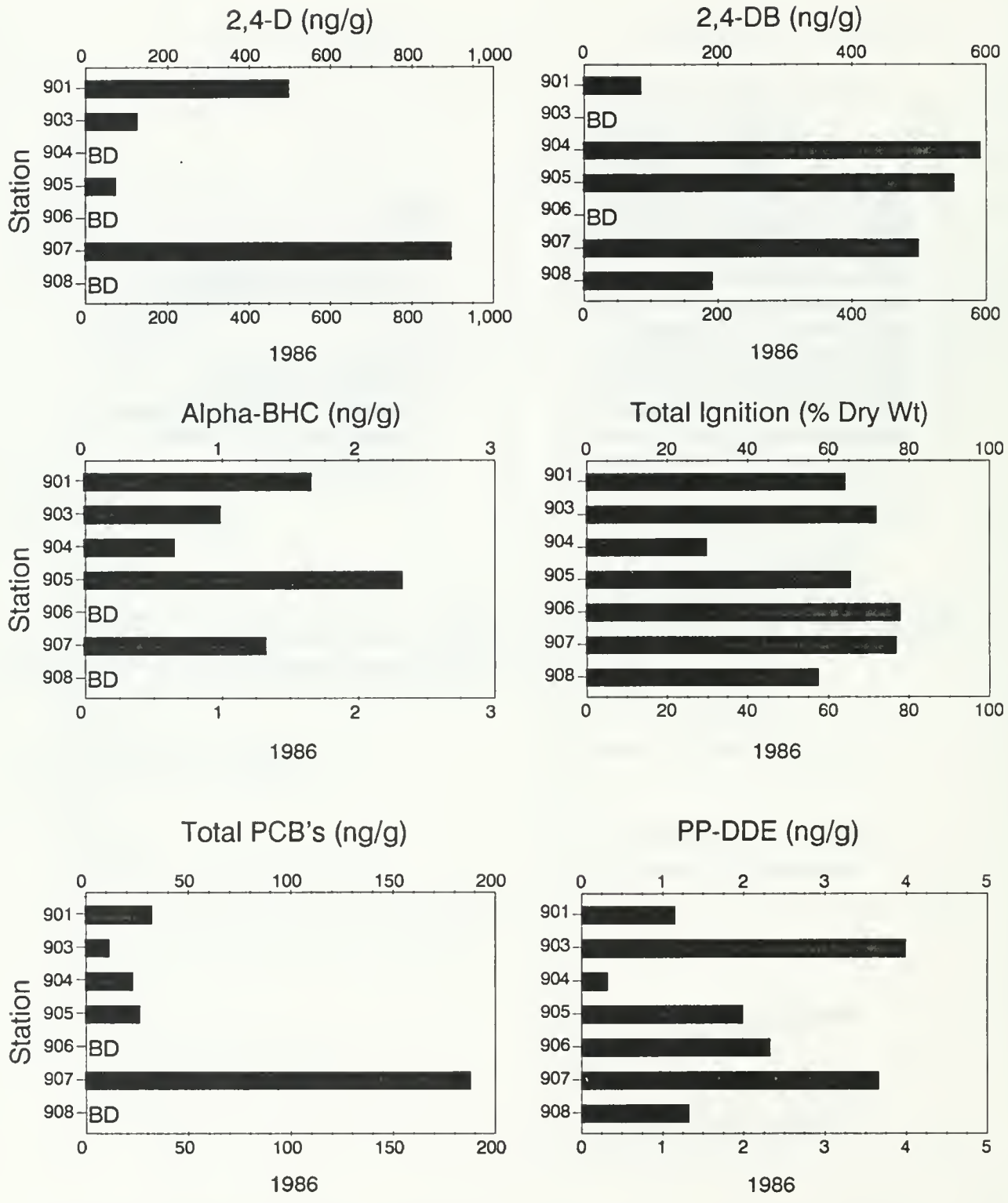

Figure Grd.1: Concentrations in ng/g Dry Weight (except where noted) of 2,4-D, 2,4-DB, Alpha- BHC, Total Ignition (% Dry Wt), Total PCB's and PP-DDE, in *Cladophora* collected from the Grand River.

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Appendix I: Results of Triplicate Analyses Showing the Arithmetic Means ± 1 Standard Deviation at Station 415, in the Niagara River, Characterized by High Concentrations of Contaminants in *Cladophora* Samples

Date of Collection	Aldrin ng/g dry	Alpha Chlordane ng/g dry	Gamma Chlordane ng/g dry	Dieldrin ng/g dry	DMDT ng/g dry	Endosulfan S ng/g dry	Endosulfan I ng/g dry	Endosulfan II ng/g dry	Endrin ng/g dry	HEPT ng/g dry	HEPE ng/g dry
87–06–18	0±0	0±0	0±0	10±5	47±42	27±6	7±12	15±19	0±0	0±0	14±10
88–06–21	0±0	0±0	0±0	3±3	0±0	5±5	3±2	5±4	0±0	0±0	3±5
89–07–05	0±0	0±0	0±0	12±2	42±8	0±0	0±0	7±1	10±2	0±0	8±5

Date of Collection	HCB ng/g dry	HCBD ng/g dry	Alpha BHC ng/g dry	Beta BHC ng/g dry	Gamma BHC ng/g dry	HCE ng/g dry	Total Ignition % dry wt	Mirex ng/g dry	OCS ng/g dry	OP–DDT ng/g dry	Oxchldane ng/g dry
87–06–18	53±23	65±65	8±14	25±44	1±2	2±3	630±0	0±0	3±3	0±0	8±11
88–06–21	422±49	882±25	1690±924	290±331	3±5	16±2	713±6	0±0	393±26	0±0	0±0
89–07–05	2948±371	2278±1321	1360±2143	1543±1337	27±25	21±12	424±26	0±0	2652±391	0±0	2±4

Appendix I: cont.

Date of Collection	PNCB ng/g dry	PCPH ng/g dry	Total PCB ng/g dry	PP−DDD ng/g dry	PP−DDE ng/g dry	PP−DDT ng/g dry	1,2,3,4 TCB ng/g dry	1,2,3,5 TCB ng/g dry	1,2,4,5 TCB ng/g dry	2,3,4,5 TCP ng/g dry	2,3,5,6 TCP ng/g dry
87−06−18	6±6		0±0	0±0	34±57	0±0	5±5	3±3	6±7		
88−06−21	30±3	0±0	0±0	0±0	0±0	0±0	36±10	8±2	38±9	0±0	0±0
89−07−05	59±31		0±0	0±0	0±0	0±0	56±25	13±12	56±26		

Date of Collection	1,2,3 TCB ng/g dry	1,2,4 TCB ng/g dry	1,3,5 TCB ng/g dry	2,3,4 TCP ng/g dry	2,4,5 TCP ng/g dry	2,4,6 TCP ng/g dry	2,3,6 TCT ng/g dry	2,4,5 TCT ng/g dry	2,6,A TCT ng/g dry
87−06−18	4±4	28±24	7±7				2±3	0±0	1±2
88−06−21	47±13	340±92	57±43	0±0	0±0	0±0	8±6	4±4	10±2
89−07−05	50±25	356±183	108±83				0±0	0±0	0±0

Appendix II: Results of Triplicate Analyses Showing the Arithmetic Means ± 1 Standard Deviation at Station 402, in the Niagara River, Characterized by Low Concentrations of Contaminants in *Cladophora* Samples

Date of Collection	Aldrin ng/g dry	Alpha Chlordane ng/g dry	Gamma Chlordane ng/g dry	Dieldrin ng/g dry	DMDT ng/g dry	Endosulfan S ng/g dry	Endosulfan I ng/g dry	Endosulfan II ng/g dry	Endrin ng/g dry	HEPT ng/g dry	HEPE ng/g dry
87–06–18	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
88–06–22	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
89–07–04	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0

Date of Collection	HCB ng/g dry	HCBD ng/g dry	Alpha BHC ng/g dry	Beta BHC ng/g dry	Gamma BHC ng/g dry	HCE ng/g dry	Total Ignition mg/g dry	Mirex ng/g dry	OCS ng/g dry	OP–DDT ng/g dry	Oxchldane ng/g dry
87–06–18	0±0	31±28	0±0	0±0	0±0	15±13	693±6	0±0	8±3	0±0	0±0
88–06–22	0±0	6±2	2±1	0±0	0±0	3±1	710±0	0±0	0±0	0±0	0±0
89–07–04	0±0	0±0	4±1	0±0	0±0	0±0	775±5	0±0	0±0	0±0	0±0

Appendix II: cont.

Date of Collection	PNCB ng/g dry	PCPH ng/g dry	Total PCB ng/g dry	PP-DDD ng/g dry	PP-DDE ng/g dry	PP-DDT ng/g dry	1,2,3,4 TCB ng/g dry	1,2,3,5 TCB ng/g dry	1,2,4,5 TCB ng/g dry	2,3,4,5 TCP ng/g dry	2,3,5,6 TCP ng/g dry
87-06-18	17±7	0±0	0±0	0±0	0±0	0±0	5±2	0±0	0±0	0±0	0±0
88-06-22	2±2	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
89-07-04	0±0		0±0	0±0	0±0	0±0	0±0	0±0	0±0		

Date of Collection	1,2,3 TCB ng/g dry	1,2,4 TCB ng/g dry	1,3,5 TCB ng/g dry	2,3,4 TCP ng/g dry	2,4,5 TCP ng/g dry	2,4,6 TCP ng/g dry	2,3,6 TCT ng/g dry	2,4,5 TCT ng/g dry	2,6,A TCT ng/g dry
87-06-18	0±0	38±25	3±5	0±0	0±0	0±0	14±4	7±2	0±0
88-06-22	0±0	4±1	0±0	0±0	0±0	0±0	0±0	0±0	0±0
89-07-04	0±0	0±0	0±0				0±0	0±0	0±0